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WITH DR. HALE WHITE IN THE WARDS OF GUY'S HOSPITAL,

March 24th, 1899.

GENTLEMEN,—In this man, suffering from aortic obstruction, you will be able to hear a loud systolic murmur, brought on in the course of the flow of blood into the large arteries. There is in his case no diastolic murmur, and, therefore, very little, if any, aortic regurgitation. But if there were a good deal, and you pressed a large artery with a stethoscope enough to constrict it, there might be, owing to the aortic regurgitation, enough suck back past your point of compression to produce a local diastolic murmur. You would then hear a to-and-fro murmur in the distant arteries, the diastolic being locally produced. The whole of the evidence in this man points to his having very little regurgitation. Where there is a to-and-fro murmur in the peripheral vessels it shows that the case is severe, and it is, therefore, of bad prognostic significance. Now, this case teaches us a great deal; his systolic murmur is so loud that you can hear it without touching his chest at all. That shows that the case is doing well, because it means that the blood is being sent with great force through his contracted orifice, and this indicates that his heart has considerably hypertrophied to overcome the obstruction. So, in all cases of heart disease, other things being equal, loudness of murmur is a good sign, for it shows that the heart has hypertrophied, and is strong enough to produce a loud murmur. This patient is in the hospital for the pain. He illustrates admirably that, broadly speaking, it is not the people with the most marked backward symptoms—swollen legs, albuminuria, &c.—that have the most pain. We have been giving him nitro-glycerine. He has not had any pain for three or four days. One of you asks, How long should we persevere with the nitro-glycerine? Well, I think it will be wise to let him have the nitro-glycerine lozenges (choco-

lates) by him. They relieve him very much, they rarely do harm, and the pain may at any moment come on severely. I remember there was a man who had some particular work on the 'Times' which made it absolutely necessary that he should be there, and I have known him swallow several of these "chocolates" at a time as if they were sweets, and he became quite tolerant to considerable quantities of them, and could not work without them. I have never known any danger happen to patients from nitrites, and we do not see in them the alterations of the blood that occur when large doses are given to animals. You will often notice that when a patient is ill he can take enormous doses of powerful drugs that benefit his disease without suffering from the ill effects of the drug; for example, patients with glycosuria can safely take large quantities of morphia.

This boy is seven years of age, and he has come in because of cough and pyrexia. He went to school on the 22nd, on which afternoon he did not feel well, so he was sent here, and as his temperature was 103° and his skin was very hot he was taken in. His respirations are 32, temperature 102·8°, pulse 108. It is an illness of sudden onset, and as there is so much pneumonia about I should think it is a case of that disease. Let us examine him and see. There is, you notice, a skodaic note at the right apex, a higher-pitched note than on the other side. As a matter of fact, but little is known about the physics of the chest, but, at any rate, the explanation which is given is so simple that it will help you to remember the skodaic note. The explanation given is that the sound elicited on percussion is produced by the vibration of the ribs, and if there is solid or fluid under many of the ribs they cannot vibrate when you percuss the chest, and only the small part of chest wall which has only air under it will vibrate, and so the note is higher. The skodaic note is much more easily elicited in children than in adults, and it is often easy in children to successfully diagnose pneumonia or pleural effusion at the base by percussing the apex and observing the skodaic note. And you see that here there are all the signs of fluid at the right base; but, on the other hand, as the voice sounds are not completely lost, and there are some consonating râles, there is probably some consolidation of the lung, together with the pleural effusion. So we may infer that

this boy has pneumococcal infection of the right lung and pleura, causing consolidation of the lung and pleuritic effusion. We know that sometimes the lung is affected, sometimes the pleura is affected, and sometimes both. This case now before us is very typical. I think that the amount of fluid we find here is capable of absorption, therefore I consider it unwise to put a needle into it. As a general rule it is bad policy to put a needle into a chest in an acute case unless there is some evidence that there is pus. Pneumonia is common now, and I think that in this boy it is probably associated with influenza. I think the influenza cases are those with the most fluid. In the influenza epidemic of four or five years ago several of the cases had much pleurisy, with no pneumonia at all; they had all the signs of pneumonia—rigor, high temperature, rapid breathing. even rusty sputum in one or two—yet, in some of the cases in which an autopsy could be made, the lung was perfectly healthy, but there was extensive pneumococcal pleurisy. The prognosis, as regards our present patient, is good because he looks well. Moreover, his age is in favour of his recovery, because no doubt young children bear pneumonia well. Pneumonia occurring in a drunkard makes his recovery extremely doubtful. I remember one case which seemed determined to obey the aphorism that a drunkard with pneumonia does badly, for though his temperature had been down some days, and he appeared to be doing well, he one day fell back dead. We found an *ante-mortem* clot which, detached from the right side of the heart, had plugged the pulmonary artery going to the *healthy* lung. Old people having pneumonia, as a rule, do badly. This boy's temperature may go down in six or seven days. As a rule, when empyema follows pneumonia, the temperature comes down at the time I have mentioned, the crisis occurring on the right day, then it begins to go up again, and you see a hectic chart. When this wavy temperature follows after the first drop, you may know there is pus. Empyema is a very rare complication of pneumonia, occurring in only about 2 or 3 per cent. of the cases; it is probably most common in those in which pneumonia is associated with influenza. The mortality is about 35 per cent. Two cases we have had at Guy's have been complicated with pneumococcal malignant endocarditis, and two or three have had pericarditis. The physical

signs of empyema after pneumonia are often much obscured by the pulmonary consolidation. Local tenderness is of great importance. One thing which is very important is that the prognosis of pneumonia varies very much in different years. Hospital statistics show that the range of mortality is from 7 to 64 per cent. This spring the epidemic of influenza is of a mild type. So the particular year in which pneumonia occurs will sometimes enable you to encourage patients. I propose to give this patient some maltine twice a day. I do so because it has been found by experiments upon animals that if you give fevered animals sugar it saves the break-down of their own tissues. The sugar gets broken down instead of the tissues. Very often, it is true, through their miserable digestion and general bad condition, you cannot give them much carbohydrate, because they would not digest it. This boy, however, seems so well, that we will try it with him.

This patient, a man æt. 40, suffers from hæmoptysis, the result of phthisis. He complains much of the night sweats. I have always taught that sweating in phthisis may be an attempt on the part of the body to get rid of the toxines of the disease, but very often the sweating is so disagreeable that it keeps the patient awake. I do not like to treat this sweating by drugs; but if you wish to do so you can give one hundreth grain of atropine sulphate by hypodermic injection.

The next patient is a man æt. 38, who has come in for pains in the stomach. The points in his history which seem to bear on his case are that he is a copper and tin smith, and that he has had too much alcohol in his time. He has apparently had syphilis and gonorrhœa. There is a scar on his foot which, however, is certainly not syphilitic. He has no blue line. He says that to vomit blood from his stomach gives him great relief, and that vomiting commenced in 1885. He noticed nothing else amiss until 1898, and then he became jaundiced, and since then he has had very little appetite. He has vomited nearly every morning, and about six weeks ago he noticed that his abdomen was beginning to swell. There were burning pains about the middle of the abdomen across the navel. On February 20th, 1899, eleven quarts of fluid were withdrawn from the abdomen. This gave great relief. The swelling and pain returned, and blood continued to come from the stomach. On

March 10th the abdomen was again tapped, and a large amount of fluid was withdrawn. Since then there has been more swelling and pain. He looks a typical cirrhotic subject. The first thing that strikes you is that his eyes are jaundiced. It is not a deep jaundice. When you see an elderly person with long-lasting jaundice, the two things which should first come to your mind are carcinoma of the liver and cirrhosis. The fact that the jaundice is light is in favour of the cause being cirrhosis. He has venules about the face, and there is a restless look about his eyes. The tongue is very red, although there is no sugar in his urine. He is constipated, and you can see that he has an enlarged abdomen. We can distinctly feel his liver to be hard, large, and rough, and there are atrophic lines on his abdomen due to distension. These lines, of course, are common after pregnancy. By far the most striking case of atrophic lines occurred in a girl who was here for acute Bright's disease; she was very œdematous, and she had these lines on recovery all over her, even on her face, which was very disfiguring. She got quite well of the Bright's disease. This man's liver would probably weigh eighty ounces. Probably it was bigger six months ago, because I believe it is now shrinking. You will find the teaching on this subject is very divergent; but I think what we tell you here is right, namely, that there is no real distinction between hypertrophic and atrophic cirrhosis. To begin with, cirrhosis is hypertrophic, as the liver contracts it becomes atrophic. The only disease for which the word hypertrophic should be reserved is that rare disease of children in which there is a big liver, big spleen, and enlargement of the fingers and toes. It is also known as Hanot's disease. All distinctions to separate the hypertrophic and atrophic forms of ordinary cirrhosis are found to break down when applied over a large number of cases. I chose that subject for a clinical lecture not long ago, and you will find it in the last volume of the 'Guy's Gazette;' so I will not go into any details now, but will content myself with pointing out that those who make much of the distinction think that when the liver is big it is usually not rough, ascites is slight, jaundice is deep, and there is no alcoholic history; but our patient has a big liver, it is rough. He has much ascites, slight jaundice, and is a drunkard. Another point which men are always

asking me about, and which causes a great deal of interest here, is that we were taught by Dr. Fagge that the presence of ascites in cirrhosis is of very grave significance; indeed, that if a man has ascites it means that he is near his end. And in the majority of cases that is most certainly true, as shown by some cases which I collected. The ascites is by no means wholly due to con- traction of hepatic fibrous tissue compressing the ramifications of the portal vein. I have dis- sected the portal vein in cases of cirrhosis with ascites without finding any dilatation of it. You must imagine that when a man gets cirrhosis of the liver, as a consequence of it there is a poison circulating in him, just as there is in a man with chronic Bright's disease or cirrhosis of the kidney. The prominent toxic symptoms of Bright's disease are called uræmia, and the prominent toxic symptoms in this disease, cirrhosis of the liver, are called cholæmia. In the toxæmia due to these corresponding diseases of the kidney and the liver the patients become drowsy; but in both of them the poison appears to be not only coma producing but also a lymphagogue which causes great exuda- tion from the peritoneal surface into the peritoneal cavity. And then there is this additional interest- ing point as showing that the poisons are somewhat similar; over and over again we have found here that patients with cirrhosis of the liver have had swelling of the feet before they have had ascites, and before the liver can possibly have been large enough to press on the vena cava, and even when they have had no disease of the kidneys. Let us look at this patient. You see he has distinct œdema now both in the feet and in the abdominal wall. That bears out my point, because there is not now enough fluid in the abdomen to explain the swelling of the feet. So you see additional evidence that in both diseases the toxine is a lymphagogue. Œdema is usually a result of two causes; one, the least important, is mechanical, the other is toxæmic. If what I was leading up to is true, it seems to teach that the presence of ascites and swelling of the feet means that the man has got a good deal of toxæmia, and therefore it supports Fagge's contention that the presence of ascites means that the case is towards its end. You will say, perhaps, that it is not so, because this patient has been tapped several times and that he is still alive. But you must remember that often ascites,

coming on in the course of cirrhosis, is due to chronic peritonitis. That is particularly likely in this patient, because he has had syphilis, and that is probably a cause of chronic peritonitis. Therefore you must not go away with the impression that this case disproves my aphorism, which is really that of Dr. Fagge, that the tapping in cirrhosis is usually the beginning of the end, for this statement only refers to uncomplicated cirrhosis, and then it is certainly true. With regard to jaundice, one point is very important clinically, and that is that the jaundice, associated with growth, is of a deeper walnut tint than that of this patient. When you see that deep walnut tint in an elderly person, it is almost certainly produced by growth. I have only once seen it in anything but growth, and that was in a woman, aged eighty, who had gall-stones. Therefore you will see that the probability of growth in such cases of deep coloration is very great. I remember, just after I was house physician, happening to meet at a railway station a very distinguished physician. He said, "I am going on a fruitless errand. I am going to see an old lady with deep jaundice, and it must be due to carcinoma." That certainty of diagnosis thirty miles away impressed me a good deal. As a rule carcinomatous patients are older than this patient. I think a man who is going to get cirrhosis has generally killed himself before he reaches the age of sixty. The drowsiness produced by jaundice is very gradual. It is very difficult to tell when such patients are drowsy, whether they are in this world or the next. Not long ago a man lay day after day in the ward so quiet that nobody but a doctor could possibly tell whether he was alive or dead, his pulse was hardly to be felt, and one could scarcely see him breathe. In granular kidney and cirrhotic liver, until the symptoms begin to be those of uræmia or cholæmia, as the case may be, the patient may go on comfortably for years. It is a singular fact that in more than a third of the cases of cirrhosis found in the *post-mortem* room the cirrhosis was not the cause of death. A man with cirrhosis is like a man walking on the brink of a precipice. He may go on well and have nothing happen to him, but he is always on the edge and liable to fall over. If you can get a cirrhotic patient to give up drink he may go on for an indefinite time. Students are often confused about the ætiology of cirrhosis. Alco-

holic drinks are by far the commonest cause; malaria may be a cause if the patient has been in the tropics, and these are the only causes of a liver such as this man has. Books tell you that specific fevers, lead, tubercle, diabetes, dyspepsia, and venous congestion will cause cirrhosis; but that statement is very confusing, for these only cause a little increase of fibrous tissue, the liver does not resemble that of this patient, nor are the symptoms the same. Nor does acquired syphilis produce a liver or symptoms at all like this case; it produces gummata in the liver, with wide bands of fibrous tissue running through it. The point which requires to be settled is, what causes alcoholic cirrhosis? There is a great deal of experimental evidence to show that you cannot cause cirrhosis in animals by giving them absolute alcohol. Again, people vary very much individually. Cirrhosis is said to be commoner in England than in Scotland, and it is possible that it is some other constituent than the alcohol in alcoholic drinks which causes cirrhosis.

This young man came in for heart trouble; he has pain in the region of the heart, and swelling of the ankles. Some years ago he had rheumatic fever, and subsequently has had other attacks, which have been treated at home. The patient first noticed pain on the right side of the chest; on Friday last the pain gradually got worse, and he has also had some difficulty in getting his breath. He had sudden pain when carrying heavy weights or walking upstairs. On admission, you see there is a diffused heart's impulse, three-quarters of an inch external to the nipple, and increased cardiac dulness. A systolic and diastolic bruit are heard in the mitral area, and a systolic bruit in the tricuspid area. The heart is irregular in its action, and there is an accentuated second sound in the pulmonary area. Albumin is present in his urine. Now, as we see him propped up there we know at once that he probably suffers from either disease of the heart or of the lungs. If it were a case of aortic mischief we should have expected more cardiac hypertrophy to overcome the obstruction. This is a small, rapid, feeble pulse, characteristic of mitral disease. If the case were one of uncomplicated mitral obstruction he would not be so bad. The pulse is very small, which shows there is very little blood getting into the arteries, and that it is not sent

with very much force. There are a great many beats in which the diastolic murmur is absent, and that, too, shows a lack of force on the part of the heart. This case teaches one how the shortness of breath these patients suffer from is not mechanical. He is not short of breath because his lung is blocked, he is not livid, he has cardiac orthopnœa. His liver is enlarged. It is said that the reason these patients like to be propped up is so that the heavy liver can drop away from the heart. He has been in the hospital before, and after treatment has gone out very much better. If we can get the ventricle to contract up better we can make the auriculo-ventricular ring smaller, and so we can prevent regurgitation. Now if this man came to you for half an hour's talk, what prognosis would you give? I think the best rule in giving a prognosis in a heart case is to be guided largely by what the patient's experience shows he can do. This young man tells us that he has been in the habit of lifting heavy bags of sugar for eleven hours a day. Therefore the probability is surely that if we rest the heart a little it can pick up. By simply looking at a number of men you know that you cannot tell who is capable of lifting the heaviest weight, or throwing the hammer the furthest; you can only tell by your experience of the men. So here it is best to be guided by what we know the patient can do. Therefore we may take a somewhat cheerful view. It is important to tell him that it would be to his advantage to try and get some less laborious work to do in the future. In the olden days every heart case was put to bed and rested. Now, we know that that is distinctly harmful in some forms of heart disease. A man should be told that you cannot undertake to treat him unless you can see him two or three times a week to start with, then once a week, then once a month, and then once in every three months or so. During that time you should makes notes of his pulse, breath, and so on, and try to ascertain the right amount of work which is beneficial for him, and tell the patient that he must not go beyond it. During the last thirty years we have been able to give a much more cheerful forecast in heart cases than we did. Many years ago there was a chaplain at one of the London hospitals who was found to have heart disease, and it was thought to be very serious, and the doctors thought he could not live long, so the

Board decided to pension him off for life at his full salary. They did so, and he drew it for thirty years. These heart cases should lead an even, temperate life in everything; they should not drink, smoke, or do anything else in excess. If such a condition is found in young adult life it is better for them not to marry. In the case of a woman with heart disease, pregnancy is bad for her. It is surprising how well heart cases can do if they take care; for instance, I know of a governess who has had serious mitral disease for many years, but keeps well, and earns her own living, provided that she lives in a house with few stairs, and in a level district, and this, too, in spite of the fact that she often is unable to lie down all night.

This girl, æt. 17, was admitted for pain in the left side of the chest. She had rheumatism some years since, and chorea six months ago, when she attended the out-patient department. She was quite well three days ago, but she had a sudden pain on that day on the left side of the chest, and it has persisted ever since. Two days after that she had pain all over her body, especially in the back; she came up on that same evening and was admitted. On admission there was found to be an apical bruit, a rub in the axilla, and dulness in the left base. It is probable that she has influenza with pleurisy, quite apart from her heart disease. This is a beautiful instance of perfect compensation in the matter of the heart; there is a good impulse: the apex is not much out of its normal position, and the beat is perfectly regular. A very good way to imagine her case is to try to picture her as a different species of animal. You can imagine there might be a species of animal which differed from ordinary human beings in having mitral orifices that permitted of a little regurgitation, but that the heart compensated for it; and that species might not be as strong as we are, but, provided they did not over-strain, they would get through life very well.

I question whether it is wise to frighten people whose hearts have compensated so well, and whose station in life prevents them leading an easier existence. It is questionable whether we should even tell her that her heart is diseased. If this patient were given a good income, and could take life easily, nobody would be able to tell there was anything the matter, unless they listened to her heart, for, hard worked as she is, it is only occasionally that she has to come as an out-patient, for a little swelling of the feet. Such a case as this in a good station in life I should be inclined to take for life insurance, with a little extra premium, provided the policy lapsed, or a different policy were issued if the patient married.

Intubation and Antitoxin.—In the interesting paper which Johann v. Bokay read at the last meeting of the Gesellschaft der Kinderärtze in Lübeck, on the duration of intubation in cured diphtheria cases before and after the serum treatment, he gives a *résumé* of all reports bearing on the question, and then relates his own cases. The average duration of intubation in the latter, amounting to forty-four cases, was sixty-one hours, as against seventy-nine in the period before serum therapy was introduced. This indicates that antitoxin has reduced the average duration of intubation in cured cases about eighteen hours. In summing up his conclusions the following points are made: "(1) The moment for final extubation is not confined within narrow limits—according to my experience, from one quarter to three hundred and sixty hours. (2) The average duration of intubation in my hospital amounted to seventy-nine hours before the serum period, but during the serum period to only sixty-one hours; in my material, therefore, the serum therapy reduced the average length of intubation eighteen hours. (3) I believe that no definite time can be appointed for secondary tracheotomy, and that the convincing presence of a severe decubitus indicates the bloody procedure, but fear of the appearance of decubitus is by no means an indication."

Medical Record, April 8th, 1899.

THE HUNTERIAN ORATION, 1899, delivered by Sir William MacCormac, Bart., on 14th February, 1899, at the Royal College of Surgeons of England, before H.R.H. the Prince of Wales, is now issued by Messrs. Smith, Elder & Co., 15 Waterloo Place, in a well printed and handsomely bound volume at the price of 2s. 6d. The book is an appreciative and scholarly recognition of the life work of John Hunter, and is an excellent example of the way in which such literary and scientific contributions should be prepared. In this interesting production the reader will not find a dull page from cover to cover.

A CLINICAL LECTURE

Delivered at St. George's Hospital, January 24th, 1899,

By FRANCIS JAFFREY, F.R.C.S.,

Assistant Surgeon to St. George's Hospital, and Surgeon
to Out-patients, Belgrave Hospital for Children.

GENTLEMEN,—I have taken as the subject of to-day's lecture some cases which have recently been in the hospital under my care. One of them is a case of scrotal swelling, and the others are cases of hernia.

The first I will refer to is a boy, aged three, who is now in Drummond ward. He was admitted for marked œdema of both sides of the scrotum. The skin was very red, but not tender. On the right side there appeared to be a large inguinal hernia and a hydrocele of the tunica vaginalis. The supposed hernia was irreducible, and there was a distinct impulse on coughing. The child's mother said that the rupture came down when the child was a month old, during an attack of whooping-cough, and it had increased slowly in size ever since. A few days before admission both sides of the scrotum became more swollen, red, and more painful. The child is pale, anæmic, and markedly rickety. His abdomen is distended, and the liver is enlarged, and it reaches nearly to the umbilicus. The inflammatory swelling of the scrotum was present for nearly a month. I then proposed to perform a radical cure, thinking it was a hernia, and, permission having been granted, I proceeded to do it. On cutting down on to the supposed sac, I was surprised to find what appeared to me to be a thick-walled cyst, which extended through the abdominal ring, it was constricted at the external abdominal ring and was not covered with peritoneum. There was no fluid contents or pus when opened. The walls were nearly a quarter of an inch thick. I passed my finger along the constricted portion into the abdominal cavity, and found a large sac, which felt like the interior of the bladder. To make perfectly sure a catheter was passed, which, however, did not go into the cavity. This cavity was in front of the peritoneum and extended partly into the pelvis, behind the symphysis pubis, and partly extended up towards the umbilicus. The scrotal portion was intimately connected with the tunica

vaginalis, and there was a small hydocele in the tunica vaginalis containing some yellowish fluid of the consistence of the white of an egg. I ligatured the scrotal portion of the sac, and excised it. I may mention that I had to remove the testicle with it, as I could not separate the sac from it.

The question is, what was this swelling? Was it a cystic vas deferens? Or was it a thickened funicular process? I am inclined to think it was a remnant of the funicular process. A description of this condition is to be found in Jacobsen's 'Disease of the Male Organs of Generation,' and is named a bilocular hydrocele, or a hydrocele, *en bissac.* The condition is due to faulty obliteration of the funiculo-vaginal process. This was first pointed out by Malgaigne; Dupuytren, however, held another view. He says that this condition is an ordinary vaginal hydrocele, which, owing to distension, pushes its way into the canal, and there begins to enlarge again. It is hour-glass in shape, and the size of the two sacs varies. The upper sac is usually of larger size. I sent the specimen to Dr. Rolleston, and he reports that the walls of this cyst are tubercular. Various methods of treatment have been recommended for this condition—puncture, injection, and incision, which have proved successful in many cases. In this case it was quite impossible that any of these methods of treatment could be of any use, owing to the thickness of the sac, consequently I had to excise the whole of the scrotal portion of the sac. As a rule these sacs are very thin, and may extend up to the umbilicus. It is possible to remove the sac in some cases by catching hold of it with forceps, and pulling it gently away. In this case it was so intimately adherent to the front of the peritoneum that such a course could not be adopted. I may mention that I have also another case, which is very similar to the last, who is attending as an out-patient for a slight injury of the hand. When this is better, I intend to take the child in, and see what I can do.

The second case which I was going to bring before your notice is a hernia of cæcum and appendix. The man is now in Grosvenor ward. He was admitted on December 23rd with an enormous scrotal hernia on the right side, with symptoms of strangulation. It is no exaggeration to say it was larger than a child's head. He is sixty-four years

of age, and his occupation is that of a porter. He has been ruptured five to six years, and has never worn a truss. A few days preceding admission he noticed a considerable increase in size, accompanied by great pain, but no vomiting till the day of admission. The hernia was irreducible, but there was a distinct impulse on coughing. He is a heavy, stout man, with very thick, fat abdominal walls, and is also very bronchitic. I decided to operate at once. The patient having been anæsthetised, I made a five-inch incision over the external abdominal ring, and exposed the sac. On opening it I found about three feet of small intestine, which was tightly strangulated, and was probably a portion of the jejunum. It was plum-coloured, but otherwise appeared healthy. I divided the constriction, and reduced this portion into the abdomen. Having got rid of this portion, I now found another piece of gut, which proved to be the cæcum, appendix, a few inches of the ascending colon, and a few inches of the lower part of the ileum. These were not strangulated, but firmly adherent to a sacculated portion of the sac. After considerable trouble, I succeeded in peeling off the sac, and reduced the contents. I did not attempt any radical operation, but simply sewed up the abdominal wound. I put in a small drainage tube for twenty-four hours. There was a slight discharge from the outer wound a few days later, but that has now ceased, and he is now only waiting to have a truss applied.

In looking over the hospital records during the last twenty years, I find that the cæcum has been in a hernial sac in cases of strangulated hernia twelve times, and my case makes the thirteenth. In one case the cæcum was found in an umbilical hernia, in two cases in a right femoral hernia, twice in a left inguinal, and seven times in a right inguinal, mine, being a right inguinal, makes the eighth.

Considering the anatomical position of the cæcum, you would expect to find the hernia of the cæcum more commonly in the right inguinal cases, it being nearest to that point, also owing to the fact that the testis may occasionally be attached to the cæcum, and is one of the causes of congenital hernia, the cæcum being pulled down into the scrotum in the descent of the testis. When I first entered the hospital it was thought that in all, or nearly all, cases of hernia of the cæcum

there was no peritoneal sac. That has been found to be incorrect. No doubt cases were found without a sac, but most cases like mine were simply adherent; in fact, mine was very adherent indeed, the only portion not adherent being the appendix.

The third case to which I want to draw your attention is one which came under my care last summer. The patient was a man aged twenty-one, a porter. He had been ruptured on the right side for some seven or eight years, but had only worn a truss for about two years. Whilst playing at billiards he thinks he overreached himself, and, although he was wearing a truss, the rupture came down. It rapidly became larger, and though he attempted taxis he was unable to reduce it. One hour later he commenced to vomit. Previously he had always had good health, and his bowels had acted regularly. On admission the patient was in good condition. There was a right inguinal hernia of the size of a large orange, very tense, with no impulse on coughing. Manipulation produced pain. Before he was admitted several attempts to reduce the hernia by taxis were made, therefore I did not waste time in further attempts. Gas and ether were given to him, and I exposed the neck of the sac. On opening it I found about a foot of small intestine and some omentum. The gut was in good condition, with the exception of a rent through the serous coat, which no doubt was caused before admission by the attempts at taxis. The muscular coat was also slightly damaged, and there was some slightly blood-stained fluid in the sac; the rent was sewn up with fine silk. Having returned the gut, I proceeded to perform a radical cure by a modified Bassini's method, which is the method most commonly used at this hospital. The incision commences from the external abdominal ring, and extends over the canal parallel with Poupart's ligament, up as far as the internal ring, about three inches. The skin and fascia are divided down on to the external oblique, and the bleeding points are ligatured before the operation is proceeded with. The external oblique is then divided along the whole length of the canal and the sac is separated up to the internal abdominal ring. The sac is then opened, so as to ascertain whether there is anything in it. To ligature the sac. the index finger is passed into it as far as the internal abdominal ring, and your assistant liga-

tures the sac over the top of your finger. It is important for the sac to be ligatured as high up as possible. It is of no use ligaturing the sac opposite the external abdominal ring, for then it leaves a cavity for another hernia to come down later on. The next step is to make out Poupart's ligament, and the arched fibres of the internal oblique and the transversalis. The arched fibres of the internal oblique and transversalis are now sewn down to Poupart's ligament with kangaroo tendons, three to four being used for that purpose; care must be taken not to occlude the external abdominal ring too much, or the cord may be constricted, and a varicocele would result. Great care also should be taken in passing the sutures, especially those of the outer end of the wound, for if passed carelessly it is possible to wound the femoral vein. Having stitched the conjoint tendon and Poupart's ligament, you next sew up the external oblique with kangaroo tendon, or with silk, whichever you prefer; I prefer kangaroo tendon. Then irrigate with biniodide of mercury lotion, and sew up the skin wound with silkworm gut. No drainage-tube is necessary. The skin stitches are left in about a week. In the particular case I am speaking of they were taken out on the fifth day. The patient should be kept in bed from three weeks to a month.

Now, the question always arises in cases of hernia as to after-treatment. For the first two or three days nothing but liquid food should be given, and no solid food taken until after the bowels have acted at least once. Milk and beef-tea are, I think, about as safe as anything I can suggest. The bowels should be opened about the third or fourth day; I prefer that they should be opened with an enema, but the means is not a matter of great importance. In these cases I think morphia does more harm than good; it is not advisable to give morphia in abdominal operations unless there is some urgent need for it. The reason for this is that it diminishes the peristaltic action of the intestines, and causes the patient to become very flatulent; consequently, with a tight bandage round his abdomen, he complains of colic, which, no doubt, he would feel even if he had no bandage on, owing to the collection of the gas which always accumlates in the large and small intestines in abdominal cases.

There is one thing you must carefully look to,

and understand the importance of, namely, to see that the patient has passed his water. The patient may complain of pain, and, if you have not looked to this matter, you may think it is pain due to the operation. There were many cases in the hospital last summer who were unable to pass their water lying on their backs; it is extremely difficult for some people to do so in that position. Therefore, I think it advisable to pass a catheter, if they do not urinate in a certain number of hours.

As to the use of a truss afterwards. It is said that after the above operation a truss is not necessary. Possibly it would be better to keep the pad or bandage on for a week or so, until the patient gets used to the altered conditions. I think most of my colleagues, who perform this operation, do not put on a truss.

I have seen my patient since he left the hospital five months ago. He left without a truss, and though his work is very heavy—that of a furniture porter—there is no recurrence of rupture at present. He came to me complaining of a swelling in the abdomen, on the right side of the umbilicus, and, on examining him, I found a large mass midway between the umbilicus and Poupart's ligament on the right side. I take this to be a thickened portion of omentum; I think it is the portion of omentum on which the ligature was placed. When I was surgical registrar of this hospital I saw one or two cases of this kind occurring in patients who had a portion of the omentum ligatured and excised.

The fourth case I want to draw your attention to is of interest, owing to the age of the patient. This was an old lady, aged eighty-one, who was admitted on October 4th with a strangulated femoral hernia. She was very feeble and bronchitic, and had been ruptured about sixteen years, during which time she had always worn a truss. The rupture came down the day before admission, and as it was very painful she was taken into the hospital and watched, as there was no vomiting or urgent symptoms at the time. These symptoms did not come on until twenty-four hours after the admission of the patient. On admission she was in fair condition, with rather rapid pulse, 120; there was a large right femoral hernia, not tense but irreducible, and no impulse. Owing to the few symptoms it was thought best to leave her alone. She commenced vomiting the day after

admission. I operated on the morning of October 5th. On opening the sac I found it contained a quantity of fluid with a large piece of omentum, and a knuckle of small intestine tightly constricted, the intestine was very much congested. I then divided the stricture on the inner side and returned the hernia. I ligatured a piece of omentum and excised it ; the sac was dissected out, ligatured, and removed. The wound was sewn up, and there was no drainage. The old lady recovered without any symptom whatever, except that she was slightly troubled with bronchitis. She went to our convalescent home, which she left three weeks later.

Owing to the age of the patient I was induced to look up all cases of strangulated hernia in people over eighty in the records of the hospital during the last twenty years. There are seven cases and five deaths. One old lady had a strangulated hernia twice in one year, and she was aged eighty-eight. The first time she was brought in and operated on without delay, and recovered. The second time there was some delay, about a week, in bringing her up to the hospital, and this time she succumbed, her intestines being gangrenous.

The two points about this case to which I want to direct your attention are :—(1) The age of the patient ; (2) the few symptoms manifested.

In most cases of femoral hernia there is not the same necessity to perform radical cure, owing to the much smaller size of the ring. Several methods have been advocated, firstly the sac is dissected out and invaginated into the ring and there fixed ; secondly Kocher's method, the sac is dissected out, twisted, and then passed through a small opening made above Poupart's ligament ; a third method is performed by taking up a flap of the pectineus muscle and fixing in the ring. In my case, of course, any lengthened operation was out of question owing to her advanced age.

Pertussis Treated by Formalin.— Olliphant
('New York Med. Journ.,' March 4th) claims to have obtained exceptionally good results from the application of a formalin solution to the fauces direct. Out of twenty cases not one lasted more than eight days. He does not give the strength of the solution, but warns that it must be used weak.
American Journ. of Obstetrics, March, 1899.

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XIX.

GENTLEMEN,—I think it will be interesting if we refer to the trial before Mr. Justice Hawkins, at Huntingdon, for strychine poisoning. I have nothing to say with regard to that trial in respect to the fact that deceased undoubtedly died of strychine, and the strychine was given in large quantities. The facts there were so plain that our interest from the point of view of medical jurists is *nil*. But you will remember what I said in an earlier lecture about hearsay and dying declarations. You may remember I quoted the case of Regina *v.* Bedingfield, which is a leading case. I will repeat it once more. Bedingfield and Rudd (a woman lived together, and they were both found with their throats cut. Rudd, the woman, before she died, rushed from the house saying something. That something was not admitted as evidence, the witness was not allowed to say what it was. The witness was proceeding to say that Mrs. Rudd ran from the house saying . . . and then she was stopped on the ground that it was hearsay, and that the woman did not know she was dying. The decision, which was that of Lord Chief Justice Cockburn, was thought to be rather severe. In this case the same thing happened. I will relate to you carefully what occurred :—Counsel for the prosecution said, at the end of the trial, there only remained the question on a point of evidence raised earlier in the case. He had tendered certain evidence of Annie Holmes on the authority of Regina *v.* Palmer and Regina *v.* Lawson. He tendered all the statements of the deceased or none. The learned judge said that what was said by the deceased as to her symptoms was admissible, but not as to how she became possessed of the poison. Her narrative could not be received as a dying declaration. These cases stood on an entirely different footing from dying declarations A person might say, " I am in great pain from having taken some medicine this morning," but might not, unless as a dying declaration, which was not the case here, go on to say where such medicine came from, or who gave it to her. It could not be said to be part of the *res gestæ*. Dr Ander-

son, recalled, said the deceased said when he was with her, "I believe I am poisoned." He asked her what she had taken, and she replied, "I have taken a powder." By the learned judge: "He formed the opinion that death was imminent because no one in her condition could be expected to recover." . . . "Except the terrified look that her face showed, and the general struggle that was taking place during the spasms, there was no sign that she expected death. The spasms were agonising ones. Her mental condition was clear between the spasms."

Annie Holmes, the daughter, recalled, said that as she was getting out of her bed her mother said, "Oh, I feel so bad." When witness got round to the other side of her bed, her mother said, "rub my legs and arms." Witness asked her what was the matter, and she replied, "I have taken poison" "What was it?" "A powder." The learned judge said that in the event of the defence taking a particular line. he might allow the rest of the deceased's statements to be given as rebutting evidence. That is a subtlety. The particular line of defence alluded to was, presumably, a defence of suicide as opposed to murder. However, as the case stands, it presents matter of very great interest, and it is important to you as doctors, because a doctor being a person who is often at a deathbed, he is very likely to have matters of this kind brought to his attention.

The next poison which will receive our attention is *zinc*. The sulphate of zinc is an emetic, and toleration for it is soon established. When sulphate of zinc was given in big doses, as it was at one time for whooping-cough, children soon became able to take very large quantities.

Chloride of zinc is an irritant poison, and it is of importance because it is antiseptic and disinfectant. It is also a constituent of Burnett's disinfectant fluid. For salts of zinc the best antidote is the stomach pump, albuminous fluids, such as milk and the white of an egg. The characteristic test for salts of zinc is that they give a white precipitate with sulphuretted hydrogen and ammonium sulphide in neutral solutions, and also a white precipitate with ferro-cyanide of potassium.

Copper is the next substance. All the salts of copper are poisonous, and the sulphate (or blue vitriol) and the acetate or verdigris may give rise

to acute poisoning. Here, again, it is interesting to bear in mind that the poisons we have hitherto been dealing with are all irritants externally. Arsenical paste and tartar emetic ointment are used as irritants, and mercurial preparations are intensely irritant when applied externally. Again, the chloride of zinc paste is a caustic which is sometimes used for external applications.

Now, sulphate of copper, or "blue stone," used to be employed very largely externally, and, together with nitrate of silver was a favourite application for getting rid of what used to be called "proud flesh," that is to say, unwholesome granulations. You who live in the days of asepsis and antisepsis do not know so much about "proud flesh" as the student of some years ago, when nobody used to be without a stick of nitrate of silver. Either nitrate of silver or sulphate of copper used to be in constant requisition, and they were used as antiseptics before they were known to be such.

Sulphate of copper in large doses is an irritant, and it is one of those things which may be used as an emetic. It produces a metallic taste in the mouth, burning, vomiting, purging, tenesmus, and, in large quantities, it causes collapse, convulsions, and so forth. With copper poisoning of this kind the vomit is often green. Is there such a thing as chronic copper poisoning? Well, opinions seem to differ very much. The best evidence we have on the subject is that of Dr. Thomas Oliver, of Newcastle-on-Tyne, who says that copper has apparently none of the serious effects upon workpeople that lead and arsenic have, but symptoms generally appeared if the copper is combined with zinc, as in brass-moulding. Experiments rather point to the harmlessness of copper, but here again you must remember we have trade interests to deal with. A great many articles of diet have been sent to this country at one time or another which have been tinged with the salts of copper to give them a good colour, to make them more saleable, but the green of copper is not really the green of the natural vegetable, and I think any practised eye can at once tell the difference. In all the best kitchens, copper utensils are used exclusively; a really first-rate cook will use nothing else. They are used because they are easily cleaned, and because they are excellent conductors of heat, and because, I take it, they are very dur-

able. It is therefore obvious that in an ordinary way no harm can come from the process of cooking in copper. But occasionally harm has come, and when things have been put aside in copper vessels, such things as preserves or soup, and allowed to go acid and ferment in copper vessels, then harm appears to have arisen, and those who have partaken of the food have suffered from gastric trouble. But here, again, we come to a little difficulty, because we must necessarily be in doubt, after soup has been allowed to go sour, and probably in a dirty place, whether the poison is in the copper, or is an organic poison, or ptomaine brewed by the micro-organism which has caused an unwholesome fermentation in the food itself. Our knowledge of ptomaines and fermentation has somewhat altered the point of view which we may hitherto have taken taken with regard to the danger of copper. I should say that copper is not good for human beings, and it does not appear to be good for ostriches. I have here some copper coins, which were given me by the late Professor Garrod, who was the prosector of the Zoological Gardens. They came out of the crop of an ostrich whom the British public fed on coins of the realm. Professor Garrod told me that the animal first exhibited symptoms of partial paralysis, and was, in consequence, constantly stumbling and falling. In two months time it took to the sitting position, and would not get up. Shortly after this it died. It suffered from great irritation of the skin of the head, and was perpetually scratching itself. Its appetite was reduced, and during the latter part of its life it would not take any food. Fifteen coins were found, *post mortem*, in the stomach, four in cæcum, together with about a gallon of stones. You may see, as you look at these coins, that on some you can just see the faint outline of the Queen's head. And what is interesting about these coins is that, in their final stage of digestion, they were all reduced to the form of spherical triangles. I have traced an outline of them on the paper I pass round. There, it can kill anything. But evidence that that it can kill anything. But evidence that that animal really died of copper poisoning is not obtainable; I take it that is not the first ostrich in the Zoological Gardens which has been fed upon copper coins.

To come back to our point, the evidence of the toxic effects of copper is not very strong. Some years ago I was at the Charing Cross Hospital (before I became attached to University College), and close to Charing Cross there was a great copper works, the firm being makers of brass and copper utensils. A large number of these men used to come to the hospital for various minor ailments, and I have often seen them. I have seen the margin of the gums round the teeth tinged green; I have seen them with the green salts of copper under their nails; and I have seen them looking quite ill, but I never learned, nor did anybody else learn, to recognise any particular set of symptoms connected with their occupation. Profesor Oliver mentions that brassfounders, men who work with the combination of metals, get a sort of ague. This "brassfounders' ague" occurs in this way. In making brass, copper zinc and some quantities of lead and tin are melted together, and it is during the act of pouring these compounds into moulds that it deflagrates, and a dense white cloud fills the atmosphere, and collects on the rafters of the building, where it forms an incrustation. In brassfounders' ague which seems to be a recognised disease, the patient is said to be cold, collapsed, and shivering, but the hot sweats and stages of true ague are absent. It is mainly new workers in brass foundries who suffer. That does not implicate copper very strongly.

All the salts of copper are coloured, therefore a colourless solution cannot contain a copper salt. I put solution of copper sulphate into three test-tubes, and if you put a bright needle into it the needle will get coated with copper. With ammonium sulphide you get a deepish red, almost black precipitate; the confirmatory liquid test is ferrocyanide of potassium, which gives you a reddish brown precipitate. Another confirmatory test, and the best, is ammonia. You see that with small quantities of ammonia you get a bluish white precipitate, which is quickly redissolved in excess, giving a deep blue liquid.

Now we come to a more important poison, from many points of view, namely, *lead*. Lead is very extensively used in the arts and manufactures, and chronic lead poisoning is of very great importance indeed. Acute lead poisoning is very rare, and criminal lead poisoning is exceedingly rare. There is a case recorded of a drummer in the Army who,

by accident, took a large quantity of what is called "Goulard's Extract," that is to say, acetate of lead, and he, in consequence, suffered from acute irritant poisoning. Metallic lead is very doubtfully poisonous. I remember, some years ago, being at the Clinical Society one night, and hearing the late Mr. Hulke say that he knew in the country a gamekeeper who was troubled with dyspeptic symptoms, which the poor are very apt to speak of as the "rising of the lights" (i. e. flatulence). It was in the days of muzzle-loading guns, &c., and when the gamekeeper was troubled with this "rising of the lights," he took a charge of shot internally to keep them down. He appeared to have taken charges of shot medicinally, and never to have come to any harm. That is quite on all fours with the fact that the large doses of mercury are innocuous.

I have only one case of criminal poisoning from lead, and it is a very interesting one, namely, "Regina v. Taylor." Louisa Jane Taylor, aged thirty-six, was convicted at the Central Criminal Court, before Mr. Justice Steven, of the murder of Mary Ann Tregillis with sugar of lead. The deceased was eighty-one years of age, and lived with her husband, a naval pensioner, aged eighty-five, at Plumstead, near Woolwich. Early in August, 1881, the prisoner came to live with the Tregillises, and slept in the room with the deceased. After this Mrs. Tregillis fell ill. She complained of being sick, and that "her throat burnt like a hot coal." She only complained of pain when medicine was given her by the prisoner, and was more sick at night than in the day-time. About a fortnight before deceased died it was noticed, both by her husband and a neighbour, that her teeth had turned black. On October 1st the deceased had an attack of convulsions, and one or two attacks subsequently. She also had tremor of the hands. She lost her speech on October 20th, and died on the 23rd. It was proved that between August and the time of the deceased's death, the prisoner had on three several occasions purchased an ounce of sugar of lead. The deceased, in a "dying declaration," had asserted that the prisoner was in the habit of mixing a white powder with the medicine which the doctor ordered for her, and that it was after taking medicine thus treated that her sufferings increased. The medical evidence went to show that

deceased became ill on or about August 23rd with sickness, shiverings, perspiration, and abdominal tenderness. Her skin was sallow, her teeth black, and there developed a characteristic blue line on the gums. Seventeen days before deceased died the prisoner ceased to attend upon her, and a few days before death the deceased had an ordinary hemiplegic attack, which it was not alleged was due to lead poisoning. Dr. Stevenson, on analysis, found distinct evidence of lead in the liver, spleen, kidneys, stomach, and brain. The drinking water of the house contained no lead. No mention was made in the evidence (as reported in the 'Times') of the coarse lesions (if any) which produced the hemiplegia. The motive alleged for the crime was the desire on the part of the prisoner to succeed the deceased as the wife of Tregillis, and thus enjoy with him (aged eighty-five) the pension of £40 a year, which he was receiving from the Admiralty. The defence was that the lead had been administered by the husband, and not by the prisoner, and the prisoner's possession of the lead was accounted for by the alleged necessity which she had of using a vaginal injection made of lead. The defence was a flimsy one, and there can be no doubt that Taylor attempted to compass the death of old Mrs. Tregillis. What was the actual cause of death is not so certain. The deceased was eighty-two, and she had an attack of ordinary hemiplegia shortly before death, and she had not had any poison given to her for seventeen days previous to her decease. Cases of death from sugar of lead are rare; cases of criminal poisoning with this agent are infinitely so. The fatal dose in cases of acute poisoning can hardly be said to be known. Some have suffered only slightly after an ounce, and several cases of recovery after this dose are on record. There were no signs of corrosion or irritation post mortem, and almost the only symptoms of chronic lead poisoning at the time of death was the blue line on the gums. The very marked blackening of the teeth, which was noticed by those in attendance on Mrs. Tregillis, may, no doubt, be accounted for on the supposition that she never cleaned her teeth, and that they became coated with lead sulphide; but, nevertheless, it is not among the ordinary symptoms of lead poisoning. The blue line round the edges of dirty teeth is due to the deposition of lead sulphide in the tissues of the gums. Old Mrs. Tregillis's death

was probably hastened by the administration of the lead, but this is more a probability than a proved fact. The conviction of this woman for murder was a very interesting thing. The sentence was not carried out.

Much more important than acute lead poisoning is chronic lead poisoning. Chronic lead poisoning has played a very important part in many diseases which for a long time were not suspected to be due to lead. In 1617, Francis Citois, the physician of Cardinal Richelieu, published an essay on the "Colica Pictonum, or the Colic of the Picts or dwellers round Poictiers." I mention this because I see it sometimes written colica pictonum, or "painter's colic." There were scattered about the world what were known as endemial colics, and Devonshire suffered from an endemial colic. Among the earliest writings is an article by Huxham in 1739, who wrote an essay called "De morbo colico Damnoniorum." Huxham's pathology is so interesting that I will read it to you. "By long and frequent drinking of liquor of this kind (cider), such a quantity of crude gross tartar is thrown into the blood that it thence becomes very acrid, and not only the blood but from that impure source all the humours thence secreted, so that instead of a very soft lubricating mucus separated by the glands discovered by Dr. Havers we have as it were a sharp coagulated matter, whence arises great pain in the joints and impotence of their motion. Instead of an exceedingly soft lymph to moisten the nerves, a corrosive ichor, and hence epileptical attacks. At length even the very bile, that variously useful balsam of the body, becomes corrupted and quite enervated by the superabundant apple acid, though in its natural state it was designed to correct acidity." That was Huxham's pathology of the Devonshire colic of 1739. In the same way one finds accounts of endemial colics in Spain; and in some regions of central America and the West Indies there was known a disease called the "dry belly-ache" of the West Indies which was ultimately found to be due to nothing, but that the people drank rum which had been brought somehow into contact with lead in the process of manufacture. These endemial colics were numerous, and the man who first made out that these colics were due to lead, and that they were preventable is deserving of the highest honour.

Sir George Baker read to the College of Physicians on June 29th, 1767, "An Essay concerning the Endemial Colic of Devonshire." Baker went into the whole matter. He showed that in Devonshire, colic was common, while in the neighbouring cider counties of Gloucester and Hereford and Somerset colic was rare. He set himself to show why it was common in Devonshire and not in the adjoining counties. After investigation he found that the cause was lead. From eighteen bottles of Devonshire cider in his own cellar he produced some metallic lead and brought it before the College of Physicians. Then he went on to show that the cider presses of Devonshire were clamped together with lead, while the cider presses in the neighbouring counties were of a different pattern, and lead was not used in them. Baker's discovery was soon applied to the elucidation of other endemial colics, and led to their gradual disappearance. But chronic lead poisoning is still fairly common, and we have always got patients in the hospital suffering from it. I have one very typical case in my wards at the present time. The cause of lead poisoning is usually to be found in the impregnation with lead salts of articles of diet. The most common thing in which it is found is water, particularly soft waters, rain-waters kept in lead tanks. Publicans who have drunk beer drawn from leaden beer engines, especially when the beer has been lying in contact with the leaden pipes, have been known to suffer from lead poisoning. I need hardly mention that lead poisoning is very common among those who work with lead dust—white lead makers, painters, plumbers, colour grinders, and so forth. It is said that the glazed linings of hats have contained lead, and that hair dyes have contained lead. Certainly one hair dye, which I used to keep here, consisted of flowers of sulphur and acetate of lead mixed. People have suffered from lead poisoning from taking snuff, the snuff having been adulterated with red lead. Bloater paste has similarly been adulterated with red lead. The glazing of pottery contains lead, and it is said that actors who use cosmetics and face paints in which lead enters, have suffered from lead poisoning. In fact, provided the intaking of lead be constant, there seems to be no quantity too small to produce lead poisoning.

DEMONSTRATION OF CASES

AT THE

NORTH-WEST LONDON CLINICAL SOCIETY.

Held at the North-West London Hospital,

Dr. MILSON in the Chair.

Dr. HARRY CAMPBELL showed a young woman, twenty years of age, with left hemianæsthesia. She had loss of sensation, more or less complete, to touch, heat, cold, and pain in the left half of the body, with diminished special sensation, that is to say, defective hearing, sight, smell, and taste. The patient was obviously hysterical, and showed hysterical tremor. She also had hemianopia, the right side of each retina being affected, meaning that there was functional trouble in the right occipital lobe in addition to the angular gyrus. Hemianopia was said to be rare in the hemianæsthesia of hysteria, but to be much more common in megrim, but in his experience it was not rare in connection with hysterical hemianæsthesia. A point of great interest in the case was the loss of common sensibility over the left half of the face, but not over the left half of the head at the back, nor of the left side of the neck, which bore out the view he had put forward, that there was a somewhat close association between the cortical centres for common sensibility belonging to the regions round the organs of special sense, and the special sense centres in the cortex. This view was, he thought, borne out by what was observed in the epileptic aura. An aura would begin in the legs and pass up to the head, and when it involved the head, and not till then, there was loss of consciousness. Directly the common sensibility centres belonging to the face were involved, the special sense centres became implicated, and with profound involvement of these centres consciousness became impossible.

Dr. CAMERON asked whether the muscular sense had been tested, and, if so, whether it was affected on the left side.

Dr. GUTHRIE asked whether Dr. Campbell regarded the case as one of hysteria pure and simple. He agreed that the symptoms were mainly hysterical, but it was a question whether there was not something behind them. Cases of disseminated sclerosis not uncommonly commenced in that way. With regard to the frequency of hemianopia in hysteria, his (Dr. Guthrie's) opinion was that it was rather uncommon, though, on the other hand, one often saw what was termed crossed amblyopia. He did not quite follow Dr. Campbell when he said that when the auræ reached the head, and taste, hearing, smell, and sight were stopped, therefore unconsciousness must necessarily supervene.

Dr. CAMPBELL, in reply, said that in the celebrated case of Laura Bridgman, who had only one source of mental access to the outer world, the patient went to sleep when that one channel was blocked. He could scarcely realise a patient having consciousness if his special sense centres were completely paralysed, he could not see what there would be left of him mentally. Still, it was a nice psychological question. The girl had been examined carefully, but without finding any evidence of organic trouble. Of course, they knew that in disseminated sclerosis, hysterical phenomena were not rare. Regarding hemianopia— curiously enough out of his last four cases of hysterical hemianæsthesia three of them had hemianopia. In reply to Dr. Cameron, the muscles sense centres did not seem to be affected. He realised the importance of Dr. Cameron's question, and would again carefully investigate this point.

Mr. JACKSON CLARKE showed a case of chronic tubercular abscess of the ankle in a youth. He had had a painful ankle since 1890, when it was swollen on account of injury. He had been in different hospitals on various dates for the condition. He had been in the militia, and appeared to have made little complaint about being marched about. In August last he came to Mr. Clarke's out-patient department with a swelling in front of the upper part of the external malleolus. The bone was considerably thickened, and it was diagnosed from the history that it was central tuberculosis of the bone. The ankle movements were free, therefore it did not appear to have invaded the joint. A free incision was made down on to the bone, and half an inch of new bone was chiselled through before reaching the original outer shell of the

tibia. After thoroughly opening the cavity in the bone, he scraped away the tubercular matter with a sharp spoon, and painted the wall of the cavity in the bone and of the sinus in the soft parts with a ço per cent. carbolic acid, which was very useful wherever there was a chance of tubercular bacilli, *e.g.* in case of tubercular glands, which could not be properly enucleated. If it were used with care its application was not attended with any pain. Then the cavity was packed lightly with iodoform gauze which had been wrung out in 1 in 20 carbolic. The cavity went very close to the ankle-joint. The hole filled up with granulations, and it was packed at various intervals with gauze. There was no further reason for packing now, since the cavity was completely filled up. The interest of the case was that it showed how long a tubercular ostitis could exist without severe symptoms or great disability to the patient.

Mr. JACKSON CLARKE also showed a young man with ankylosis of the left hip after osteotomy. Before operation the thigh was adducted and flexed, and the pelvis was inclined at a great degree, and he walked on his toes, with the left foot in the position of talipes equinus. There was about a quarter of an inch of real shortening. The obvious course was to get the pelvis horizontal again, either by breaking down the adhesions in the hip joint, or by an osteotomy of the femur, abducting the part of the bone below the seat of osteotomy. From the history of the case he thought it was one of tubercular coxitis. When the patient was under the influence of the anæsthetic the adhesions were practically unyielding, and there was no evidence of movement between the femur and the ileum, therefore he did a subtrochanteric osteotomy. The patient could now put his foot firmly to the ground. He had a little over-corrected the, deformity. Another interesting point was that the patient, previous to operation, had definite lateral curvature of the spine from the obliquity of the pelvis. To all intents and purposes that had disappeared with the correction of the other deformity. Such cases had been put forward as instances of cure of lateral curvature of the spine. As a matter of fact, there had been no real deformity in the spine. The present patient already (twelve weeks after operation) walked very well.

Dr. BOULTING asked why it was that in some cases of bad posturing there was bony deformity which did not occur in other cases, even though the bad posture was maintained for years.

Mr. JACKSON CLARKE, in reply, said nearly all the more serious deformities of the spine, &c., were due to bone disease—rickets, osteoarthritis, &c. These conditions often commenced with anæmia in childhood. Children, whose bones and ligaments were abnormally soft, readily acquired bony deformity through having to assume unnatural postures at school, either through bad height of desk or bad light, while other children might be subjected to the same conditions without any spinal deformity resulting.

A Case of Fatal Hæmorrhage from the Conjunctiva.

—Allison J. Abbe reports the case of a newborn babe, in which death occurred on the second day from hæmorrhage from the conjunctiva. The left upper lid appeared red and swollen when the infant was bathed. This increased so that it became everted spontaneously when the eye was opened. The next morning a straw-coloured discharge appeared when, by mistake, a drop of 6 per cent. instead of a 2 per cent. solution of nitrate of silver was dropped into the eye. At eleven o'clock bloody oozing began, which became a steady trickling by 3 p.m. At 4 p.m. bleeding began from the right eye. Any handling of the lids made the bleeding worse. On everting the lids the upper one had a "dark purple, rough, adherent mass" over its whole surface. The conjunctiva of the globe and the cornea were clear. The bleeding continued until midnight, when the child died.

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by the Author.

NOTICE.

A CLINICAL LECTURE

ON

SYPHILITIC DISEASES OF THE BRAIN AND NERVES.

Delivered at the National Hospital for the Paralysed and
Epileptic, Queen Square, London, March 14th, 1899,

BY

JAMES TAYLOR, M.A., M.D., F.R.C.P., &c.,

Assistant Physician to the Hospital; Physician, North-
Eastern Hospital for Children, and to the Royal
London Ophthalmic Hospital, Moorfields.

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GENTLEMEN.—I propose to speak about the effects
of syphilitic disease on the brain, on the spinal
cord, and on the peripheral nerves, either cranial
or spinal, and in conclusion I shall briefly relate
the history and the clinical progress of two cases
illustrative of brain syphilis.

Syphilis, as met with in the nervous system,
especially in the spinal cord, is, in my experience,
rather rare. One meets with it clinically, and
treats it, and often treats it with apparent success.
But post-mortem, spinal changes due to syphilis
are exceedingly rare ; as a matter of fact, in this
museum at the present time we have no illustrative
cases of this condition. On the other hand, brain
syphilis is very much more common, and one
meets with specimens of it far more frequently.
Both the cases which I propose to relate to you
were instances of brain syphilis.

To begin with, I should like to say a few words ·
about certain affections which are looked upon as
sequelæ of syphilis, but which cannot be strictly
regarded as syphilitic, namely, general paralysis of
the insane and tabes · dorsalis. As you are
aware, it is held very strongly in some quarters
that syphilis is a necessary precursor of both those
diseases.

Dr. Savage used to say that his question was, in
cases of general paralysis, not *whether* the patient
had had syphilis, but *when* he had it ; that is, how
long before the manifestation of general paralysis

the patient had had syphilis. He assumed that the subject of general paralysis must have had syphilis. The same is said by many to be true of tabes dorsalis. Erb, perhaps, is the authority who insists most strongly upon the connection of the two conditions, and in his most recently published series of cases he has proved that 90 per cent. of his tabetics have had syphilis. Now, in tabes and in general paralysis of the insane you may have absolutely no signs of syphilitic disease strictly so-called. In the one case there is undoubtedly degeneration of the posterior columns, and in the other degeneration of the brain and other structures; but there may be no condition of either arteritis or gummatous inflammation, or any other recognised syphilitic process. So that in looking upon those as sequelæ of syphilis we must go a step further than the stage of tertiary syphilis, and must, if we are to be logical, take the view that is now being generally accepted, that these conditions are really the results, not of the syphilitic poison itself, but probably of some toxic substance which the action of the syphilitic poison generates in the body. Therefore, in dealing with general paralysis and with tabes dorsalis, we have probably to do with a disease of the nervous system, the result of toxic substances similar in some respects, for example, to alcohol. A very interesting analogy was pointed out by Sir William Gowers some time ago between tabes dorsalis and alcoholic neuritis. In trying to explain this view, which is now being accepted to a great extent, he remarked that the microbe of syphilis probably bore a similar relation to tabes dorsalis that the yeast plant did to alcoholic neuritis. In each case there is a low form of organism, and in each condition you have a degenerative disease in a certain part of the nervous system, in the one case in the peripheral nerves, and in the other in certain tracts in the spinal cord. So we must look upon those two diseases, general paralysis and tabes dorsalis, as being in a separate category from the ordinary cases of what is known as syphilis, regarding them as degenerative diseases possibly related to syphilis, by some called parasyphilitic, but not syphilitic in the strict sense of the term as we apply it pathologically.

Now let us consider the conditions of brain syphilis first of all. Of these there are several varieties, and probably most common is the condition of meningitis. In meningitis—the result of syphilis—one has probably a widespread thickening of the different membranes, more especially of the pia arachnoid. This is the condition which is known as *gummatous meningitis*, or *meningitis gummosa*.

Associated with this thickening of the membranes there is often, of course, another form of growth present, namely, a gummatous growth in the nerves. This growth may come from the sheath of the nerve, and may compress the nerve so as actually to destroy it, and this is particularly common in one nerve, namely, the third, or oculomotor nerve. That nerve is certainly the commonest to be affected in syphilis. Besides this cranial inflammation you may have a condition of arteritis, the arteries may be inflamed, the inflammation affecting both the outer and the internal coats sometimes uniformly, but more often in nodular fashion. It is well to remember that it is an endarteritic growth, really a form of gumma of the arteries. The veins also are affected, often thrombosed, and in a characteristic section such as I will show you by-and-by, you will see the vessels are affected in different degrees, some of them being completely occluded, some are considerably thickened, and others only slightly thickened. We have also in the brain the gummatous form of inflammation, separate gumma, which are often mostly about the base, growing from the membranes. One of the chief characteristics of syphilitic inflammation is that it does not affect the brain structure proper, but only the blood vessels or the membranes. These gummata grow from the membranes and depress the cerebral substance, giving rise to symptoms which vary according to the structures which are depressed. One of the commonest places for gumma to grow is in the optic chiasma, another common seat is where the fifth nerve emerges from the pons, and still another is the posterior part of the cerebellum. Of course, in any case in which you have a gumma in the brain you nearly always have more than one, and, in one case which I saw some years ago, the extreme rapidity of the symptoms was a very striking feature. The patient was a musical artist. He was acting professionally one week, and the following week he came to this hospital complaining of headache. He was found to have ptosis on one side, was admitted into the hospital, and in the course of a very short time he became comatose

and died. Besides the ptosis he had paralysis of one of his fifth nerves before he died. At the *post-mortem*, which I conducted, I found five gummata about the base of the brain—one in the optic chiasma, one on the fifth nerve, one in the fissure of Sylvius, and two over the cerebellum. Ten days before his death he was well, and was going about as usual, therefore those gummata must have grown very rapidly indeed. As a result of those brain lesions which I have mentioned, we have symptoms varying, of course, according to the positions in which the various lesions occur. In meningitis affecting the convexity one not infrequently finds the patient has a series of fits, and the case may very closely simulate one of ordinary epilepsy. In one of the cases, which I shall relate by-and-by, you will see that there were not only fits, but symptoms which were indistinguishable from *petit mal*. Therefore it is well to remember that in syphilitic inflammation of the membranes there may be fits and convulsions and other general conditions which closely simulate epilepsy. To put it broadly, you have evidence of irritation of the cortex. Then, of course, with endarteritis and blocking of vessels you would naturally get paralysis, and this is probably one of the most important conditions that we meet with as a result of syphilis. The patient becomes affected with hemiplegia, and on going into the history we find he is free from cardiac disease and from all sorts of kidney disease, and we naturally conclude that the hemiplegia is the result of syphilitic endarteritis. In most cases it turns out that such is the case, and there is a broad rule that one goes by; it may seem a somewhat hard and fast rule, but as a matter of fact, for working purposes I think it is an extremely good rule. It is this :— Given a man, under forty, who has no signs of heart disease or kidney mischief, but who has hemiplegia, the chances are that it is syphilitic hemiplegia. Whatever the history which the patient gives, or whatever are the facts which you can get out of him, it is one's duty, so far as treatment is concerned, to regard the case as if it were syphilitic. When the patient is over forty years of age it is of course a different matter, because then the degenerative changes are operating, and they have to be taken into account, and in such a case the hemiplegia may be the result of ordinary atheromatous and degenerative changes in the

vessels. But in a man under forty the presumption is that syphilitic inflammation has blocked a vessel supplying a certain area, and that accordingly that area of the brain has become functionless. If we have to deal with a case of cerebellar disease, the symptoms are entirely different, and one of the most striking symptoms, so far as my own experience goes in cerebellar syphilis, is the intense headache which is produced. We know that in most ordinary cases of cerebellar tumour which are not syphilitic, headache and severe vomiting, and optic neuritis are very striking features, and the same is true of brain syphilis. The headache is extremely severe, vomiting also may be severe, and, of course, there may be all the symptoms of cerebellar tumour. Unless the gumma or thickening be in a position to give rise to pressure on the middle lobe, there may be none of the staggering which is so frequently associated with cerebellar disease; for instance, if only the lateral lobe is affected the patient may escape from that experience.

So much for syphilis as it affects the intra-cranial contents. So far as my experience goes, those are really the conditions which one has to deal with. There may occasionally be rarer conditions met with, but I do not think they are worth while taking into consideration at present.

Now, as regards syphilis of the spinal cord, as I have said before, this is an extremely indefinite condition. One meets with many cases in hospital, and sometimes with cases in private, of clinical conditions which one must ascribe to the formation of gummata in the membrane of the spinal cord, and one sees those cases clear up with energetic anti-syphilitic treatment, and they remain apparently well so long as they are kept under observation. What happens afterwards one does not know. This is the commonest form of syphilis as met with clinically. But if we take the pathological conditions which are recognised as syphilitic in the spinal cord, it is extremely difficult to be dogmatic about the cases. One has seen cases of extreme thickening of the dura mater, in which the cord has been very much compressed by the dura mater, and one has been taught that those cases are cases of syphilis. Of course, it is quite possible that they are, but I do not think there is any very definite proof of it, because, in the cases which I have examined *post mortem* there was no

sign. of. syphilitic lesion elsewhere, whereas in syphilis of the brain, such as in the cases I have mentioned, one nearly always finds evidence of syphilis elsewhere, particularly in the liver. One of the clinical cases I shall refer to had evidence of that description. But in cases of thickening of the membranes of the spinal cord and of chronic meningitis, which are very rare, I have never come across any condition which could, in other parts of the body, be looked upon as the result of syphilis. So I am extremely sceptical about their really being cases of syphilis. At any rate, if they are syphilitic they are not benefited by anti-syphilitic treatment. Of course, if there is a gumma in the spinal cord you get very definite symptoms, girdle pain, paralysis with spasticity, and interference with bladder and rectal functions, and other general effects of pressure on the spinal cord, effects, of course, similar very often, in degree and kind, to the effects produced by bone pressure in caries of the spine. Those cases are very amenable to treatment as a rule, but they must be treated energetically, both with mercury and iodide of potassium. Of course, we assume that they are syphilitic because they do well under such treatment, but I have never seen any case of this kind *post mortem*, and naturally one is not anxious to have post-mortems. If they get well, so much the better. I have seen one curious case of infiltrating syphilitic growth in the spinal cord, but there were certain growths elsewhere which could not be distinguished from gummata, and in that case there was an infiltration of new matter along the whole length of the cord, extending into its substance, and simulating very closely other forms of new growth. Some of the specimens were submitted to various pathologists in London, and certainly the balance of opinion was in favour of the condition being syphilitic. The patient had a history of syphilis ; and if it was a case of syphilis it was an unique case, which one would keep in mind with reference to the future, but which is of practically little importance. The interesting feature about it was that the patient was in this hospital about the time that we were beginning to work out and recognise the condition known as syringomyelia. This patient had practically all the symptoms of syringomyelia—loss of heat, sensation, and various paralytic phenomena. The only way in which he differed from a subject of syringomyelia was in

the severity of the onset, and the rapidity of the course of the disease. When the case came to be examined *post mortem* we found this condition, which I have mentioned, which is very rare and very interesting.

There is one condition which one ought to speak about with regard to syphilitic spinal cord disease, namely, that known as cervical pachymeningitis. There is a condition in which there is a very considerable amount of thickening in the region of the neck, assisted with much paralysis in the arms and an affection of certain muscles, and sometimes of sensation. The condition really closely resembles one of progressive muscular atrophy, except that there is the pain at the back of the neck, some thickening in the same region, and some affection of sensation, as well as of the motor power. Therefore, if one comes across a case resembling progressive muscular atrophy, and still more closely resembling syringo-myelia, one ought to think of the possibility of the condition being one of cervical pachymeningitis. This thickening in the cervical region is almost invariably the result of syphilis, and is amenable to treatment to a certain extent, that is to say, the patient is often given relief from severe symptoms by anti-syphilitic treatment, but he cannot be given such relief as to restore him to complete health. Some disability, as a rule, remains when everything has been done that can be done in the way of treatment. You will have gathered from what I have said that these conditions are at the beginning very indefinite indeed. The only disease which is recognised as syphilitic is cervical pachymeningitis. There is also the condition of gumma in the spinal cord, which one sees clinically, but very rarely indeed *post mortem*. That the infiltrating disease which I have mentioned is syphilitic I should be very doubtful, because syphilitic forms are from the membranes, and are not likely to be infiltrating.

A not uncommon experience is to find that in cases of ordinary acute or subacute myelitis there is a history of syphilitic infection some years previously, and as Williamson, of Manchester, and others have demonstrated in such cases the presence of syphilitic disease of blood vessels, there is every reason to suppose that many of these cases of myelitis are syphilitic in origin, softening occurring in the spinal cord as a result of vascular disease in a manner similar to that in

which it occurs in the brain, from similar end-arteritic changes.

With regard to the nerves there is little to be said in relation to syphilis. The commonest form of neuritis is that due to gumma, and the commonest nerve to be affected in that way is the third cranial or oculo motor. Another condition is syphilitic polyneuritis, but I should doubt whether there is often such a condition of pure neuritis. Conditions of so-called polyneuritis, I think, are more likely to be the result of thickening of the membranes of the spinal cord, a thickening similar to that which occurs in the cervical region in pachymeningitis; this may also occur in the lumbar region, and give rise to similar effects. So, I think, one may take it that the condition of polyneuritis, or multiple neuritis, as a purely syphilitic affection is extremely rare, if it exists at all. Isolated neuritis does occur in cranial and spinal nerves, possibly from small gummata pressing on the nerve and causing its destruction. But anything like the widespread neuritis which one gets as a result of alcoholism I do not think can be traced to syphilis pure and simple. In cases in which it is said that syphilis has been the cause of polyneuritis, I think it will be found that alcohol was present as well, and we know that alcohol alone may give rise to a condition of that sort. Those are really the conditions of the nerves produced by syphilis so far as they have come under my observation. As you see, they are not very numerous, although, of course, they are frequent enough in occurrence. To sum up :—

The brain condition is important—inflammation, gummatous meningitis, and endarteritis. The effects of those are fits and convulsions, very often with coma and localised paralysis, either hemiplegia, or perhaps even more restricted than that. There is also the condition of gummata of the cerebellum, a thickening of the meninges over the cerebellum. In the cord gummata give rise to spastic paralysis, with girdle pain and so on, and to cervical hypertrophic pachymeningitis, and you may have a similar condition in the lumbar region, although the latter is not described as a clinical entity as the cervical form is. Then in the nerves there is an isolated neuritis of single nerves; if there be widespread neuritis the chances are that the condition is not syphilitic, that there is something besides syphilis giving rise to that neuritis.

There is one class of case I should just mention, of which I have seen two examples. I have only seen them clinically, and I do not know what the *post-mortem* condition is. Clinically they were characterised by great mental change, strongly suggestive of that occurring in general paralysis of the insane. There was no pupil change, no change in articulation, no paralytic symptoms, and in both optic neuritis was present. Both patients were men under forty, and active mercurial treatment had the effect of materially improving the condition. Yet the psychical condition, although it improved, did not pass off. The subsequent history of one of those cases I happen to know. He was a man who was in the hospital ten years ago. He is alive, and his daughter came to my out-patient department four weeks ago as a patient. She is the subject of epilepsy. The man himself was employed at some gasworks, and he has never even reached a sufficiently high level of intelligence to resume his employment there.

I ought to say something about the treatment of syphilis. With regard to the brain condition it is very simple, but there is no doubt that one ought to mercurialise one's patients as soon as possible, and it is well to do it by inunction. Iodide of potassium should also be administered in fairly large doses. I think if you give 60 grains a day you will do as much good as if you gave 90 or 120 grains, or a considerable quantity greater. The main point is to get the patient well under the influence of mercury as soon as possible. There is one thing that perhaps I should have mentioned in reference to the nature of the syphilitic lesion, and that is it is usually spoken of as tertiary syphilis. Perhaps it is, but tertiary syphilis does not mean it comes on a particular time after the primary infection. It used to be thought that tertiary syphilis did not manifest itself until a year after infection, but I have seen a patient who had a hard chancre in December, who became hemiplegic in the following March, and there is no doubt that the hemiplegia was the result of what is known as tertiary syphilis. We shall now consider the two clinical cases.

The first is that of a seaman aged thirty-two, who had been in the Royal Navy. He was admitted to the hospital on October 11th, 1892, under the care of Dr. Hughlings Jackson. On admission he was in a state of semi-coma, and the right eye

was completely closed. There was weakness of the left side of the face and of the left upper limb, possibly also both lower limbs. He had enjoyed very good health until two and a half years before admission. At that time he fell a considerable distance from the rigging of his ship on to the deck. It is not known whether he lost consciousness or not, but he fell on his feet. He had also suffered from what was called rheumatism for almost two years. Previous to the onset of this he had slept on deck one night in India. This was followed by an attack of fever. He was in the hospital for this for two months, and was then invalided home. Until six months before admission he was at Haslar, and was then discharged from the service. Ever since he was in India he had to have morphia on account of the headache and the sleeplessness. During the six months before his admission he had complained a good deal of his head. In the last month he also had had pains in the limbs, especially in the right arm, and in both legs. These pains are said to have been sharp and shooting in character. During the last fourteen days he had vomited frequently at various times. The vomiting occurred without relation to food. Six days before admission he screamed out with pain, turned black in the face, and lost consciousness, and the left leg and arm were moved. He remained unconscious for half an hour, and at the end of that time he was in the dazed condition, in which he afterwards remained. A few hours after the attack, the right eye was seen to be closed, and it remained in this condition. There was no return of the vomiting, but he remained dazed, and evidently not understanding what was said to him. He had had much difficulty in taking food, and the bowels had been constipated. There had been no more fits.

His father and mother both died of consumption, and a sister of cancer. Otherwise the family history is without significance.

On admission he looked a strong, healthy, clear-complexioned man, with obvious ptosis on the right side. He was drowsy, and did not seem to understand what was said to him. Besides the ptosis there was also an affection of other branches of the third nerve. There was weakness of the left side of the face, and the tongue was protruded to the left. There was no optic neuritis, and no affection of other cranial nerves. There was paresis of the left arm and weakness of both legs,

but it could not be definitely ascertained whether one was weaker than the other. There did not seem to be any sensory impairment. The knee-jerks were feeble, the right, however, being more active than the left. There were no signs of cardiac or pulmonary affection. Urine and fæces were passed in the bed. There was a scar in the right groin, evidently a relic of a bubo. During the next few days there was no material change in his condition, in spite of active mercurial treatment. There was sickness once, and he was occasionally noisy and incoherently talkative. At 5.30 on the 17th he suddenly vomited twice, flexed his arms and hands, assumed an extreme condition of opisthotonos, and fell back dead. The optic discs were examined a few hours before death, and found to present no abnormal appearance.

The *post-mortem* examination took place forty-eight hours after death, when the rigidity was passing off. The skull cap was removed without difficulty, and after reflection of the dura mater it was seen that along the vessels on the surface there was a yellow, gelatinous, purulent-looking exudation, but there was no appearance of tuberculosis anywhere. There was adhesion between the hemispheres along a part of the longitudinal fissure. The tempero-sphenoidal and occipital lobes were also adherent to each other, and in each hemisphere there was in the parieto-frontal region inferiorly a shallow hæmorrhage, covering a space one and a half inches long and one inch deep, lying under the pia mater. Besides this condition of general meningitis there were in several parts of the membranes of each hemisphere masses about the size of a pea, of almost cartilaginous consistence. Each of these masses had, apparently, as its nucleus, a gaping vessel with evidently thickened walls. The most marked one of these masses was in relation to the right third nerve. This nerve was completed disorganised, so that in spite of special care it broke during the removal of the brain. The arteries in other parts where these masses were not present had their walls much thickened. These masses were confined to the cerebrum, none being found in the cerebellum, although they were carefully looked for. The heart valves were considerably thickened, but competent. The lungs were normal, except that at the left apex there was a branching mass of fibrous tissue. In

the liver were several distinct gummata, both in the upper and lower surface. There was also on the upper surface of the right lobe a distinct cicatrix, probably of an obsolete gumma. The kidneys and spleen and other viscera, except the left testis, were normal. This organ was hard and fibrous, and its capsule was considerably thickened.

This case illustrates the gummatous meningitis to which I have referred, and also what I mentioned as a frequent complication of this—inflammatory involvement of the blood-vessels and also of the cranial nerves. I have put under the microscope a section of one of these nodules, showing the various stages in the process of occlusion of arteries, some with the wall very much thickened, others with the lumen completely obliterated, and some in which there is a large clot present. All of them have a very large amount of small celled infiltration.

The second case is that of a charwoman, single, aged thirty-six. She was admitted on account of fits and mental impairment. The history was that for eighteen months she had been subject to fits. The first was very severe, and they continued to be of this character until three months before admission. At one time she remained unconscious for several days; on one occasion she went as long as three months without fits. The fits were much slighter during the three months before admission. Before the severe fits she usually indicated their approach by saying "I am going," just in the way as in epilepsy the patient has an aura. She would then fall down, lose consciousness, and become black in the face. The limbs became fixed, but there was no twitching it is said. She sometimes used to struggle and scream during the fits. It is said that she never bit her tongue or passed water during the attacks. In the slighter fits loss of consciousness is said not to have been invariable, and their marked feature was twitching in the right side of the face. Since the fits commenced she had occasionally "lost herself" for two or three minutes at a time. She would take up something, walk with it, apparently in a dazed condition, and put it down in another place, and afterwards have no recollection of what she had done. She also on one occasion walked into a shop, put down her money, walked out again and home, and had no recollection afterwards of what she had done. She had also found herself

in a strange place without any knowledge of how she got there. She was never affected in this way before she commenced to have fits. That is automatism, which is so often seen in epilepsy, in which the patient may do various elaborate acts, and may even commit a crime without any recollection or consciousness of the act. Yet, as we shall see, this patient had an actual cerebral lesion, and did not merely suffer from idiopathic epilepsy.

Three months before admission it was noticed that her articulation was thick, she did not seem able to find the word she wanted to say. This difficulty was at first only present after the fits, latterly it had been constant. She complained of occasional severe pain in the head, but she only vomited once after a fit, about six months before admission. There is no history of any local paralysis, either motor or sensory, and her family and personal history in other respects could not be ascertained.

On admission the patient looked very ill, was anæmic, and was psychically very dull. The ocular movements were good, the pupils equal, and their reaction both to light and during accommodation normal. The edges of the discs were distinct, but the details of the fundus were difficult to see on account of the numerous floating opacities in the vitreous. It was impossible to test vision. There was excessive tenderness on pressure over the left parietal region. The right side of the face was flatter than the left, but there was no other obvious paralysis. She apparently did not understand anything said to her, and she did not speak. There was no evident weakness of the one arm or leg any more than of the other, and apparently no loss of sensation. The heart and lungs revealed no abnormality on examination.

After admission the patient remained dull and drowsy, and had several slight twitchings of the right side of the face and of both eyebrows. This went on sometimes for an hour at a time, and on one occasion the right hand was observed to twitch. The twitching became more severe and general, and she passed into *status epilepticus*, which continued during an afternoon and night, and terminated fatally a week after admission.

The *post-mortem* examination was made on the same day. The skull cap was found to be considerably thickened, and was adherent on the right side, but easily separated. On trying to reflect the

dura in the usual way it was found to be adherent and much thickened over the left hemisphere, from the Rolandic area backwards to the occipital, and downwards to the temporo-sphenoidal lobe. This hemisphere was only removed after cutting through the crura and the corpus callosum. The dura on the right side was not much thicker than usual. The surface of this hemisphere had an opaque, milky appearance over the vertex, apparently a result of thickening of the pia mater and arachnoid. A close examination of the left hemisphere after it was removed showed that the dura was closely adherent over the area already described, and very hard, almost gristly in existence. On incising the fixed part of it, it was found to consist of a hard, tough substance, about one and a half inches thick at its deeper part, shading into normal dura in all directions. This was evidently a gumma developed in the substance of the dura mater, and below it the cerebral substance was pressed upon and indented. The photograph I pass round will show its extent. The other organs show no abnormality, except that there was marked atheroma of the aorta, and some thickening and adhesion of the cusp of the mitral valve. There was no gummata or cicatrices in the liver, but the kidneys were granular. That illustrates an extreme condition of gumma of the dura mater, another form of brain syphilis.

These, then, are two illustrative cases of brain syphilis, the first in which the disease affected chiefly the vessels, the second in which the membranes were chiefly involved. They offer, as you will have recognised, many points of interest and importance, both as regards the symptomatology of such conditions, and also as to their similarity to other diseases. I trust that they may serve to stimulate your interest in what must be regarded as a very important form of disease.

Anatomy of Atrophy of Optic Nerve.—
The primary inflammatory nature of sclerotic foci in the central nervous system is more recognised, and Elschnig shows that the accompanying atrophy of the optic nerve is a process identical with the fundamental affection of which it is merely a special localisation; first a peculiar acute interstitial inflammation leading secondarily to the disappearance of the nerve-fibres and the thickening of the connective tissue.

Journ. Amer. Med. Soc., April 8th.

NOTES ON TUBERCULAR DISEASE OF THE THROAT AND NOSE.

BY-
MAYO COLLIER, M.S.Lond., F.R.C.S.Eng.,
Of the North-West London Hospital.
Read before the West Kent Medico-Chirurgical Society,
Friday, April 7th, 1899.

MR. PRESIDENT AND GENTLEMEN,—It was with much pleasure that I accepted your invitation to come here this evening to read you a few notes on the subject of tuberculosis as affecting the throat and nose.

You, with myself, have this evening listened with great interest and pleasure to the excellent and instructive accounts of this disease as affecting the skin and eye, and were glad to note that appropriate treatment in the hands of such skilled specialists as our present and late presidents was often rewarded by complete freedom from pain and discomfort, if not always by complete restoration to health. I regret I have a different tale to unfold to you. I cannot conceive any more cruel or distressing complaint than tubercular disease of the larynx, nor do I know of any complaint where less reward follows our best endeavours at treatment.

And, first, let me say that although the nose and throat is the porch-way or entrance to the lungs, and would naturally first take up or be affected by dried bacilli floating in the air during inspiration, that, compared to pulmonary tubercular disease of either one of these parts is extremely rare.

Now the question presents itself, what relation, if any, has pulmonary tuberculosis to the same affection of the larynx and pharynx? Is one consequent on and due to the other, or vice versa?

I have stated that the deeper one descends into the respiratory tract, the more common is tuberculosis, the higher one ascends the more rare is this disease. Pulmonary is more common than laryngeal, laryngeal than pharyngeal, and pharyngeal than nasal tuberculosis.

Now, oddly enough in this comparison, the less common the more severe and fatal is this affection. Pharyngeal tuberculosis is infinitely more fatal than laryngeal, and laryngeal than pulmonary. Why is this? Because, as a

rule, neither the larynx nor pharynx becomes affected till a late stage, and not till the advent of general, more or less acute, miliary tuberculosis. Post-mortem examinations tell us that in 30 per cent. of all cases of pulmonary tuberculosis the larynx is affected more or less, but only in about 13 per cent. severely, or in a degree to call for treatment during life, also that only in 1 per cent. of cases of death from pulmonary tuberculosis is the pharynx affected, and not one in a thousand cases is the nasal cavity affected.

What is the practical use of these statistics? Why, that given any ulcer in the pharynx, larynx, or nose, it is 100 to 1, 10 to 1, and 1,000 to 1 against its being tubercular. This is surely a point worth knowing. Now, we must ask the question, has any post-mortem examination shown us tubercular disease of the larynx, pharynx, or nose, and the lungs, with other parts, healthy? There is no record of such an observation. Ulcers, with all the signs and proofs of tubercular disease, have appeared on the pharynx and larynx, and yet no physical signs of disease have existed in the lungs; these patients have, in most cases, developed pulmonary tuberculosis later. It is not fair to infer that the throat or laryngeal trouble preceded the pulmonary. The corroboration of this statement could only have been afforded by a a post-mortem examination.

Then, to sum up the rarity of laryngeal and pharyngeal tuberculosis as compared with pulmonary, the fact that it is usually associated with a late stage of the disease, and the fact of the known association of pulmonary tuberculosis as an antecedent, and the unproved existence of laryngeal and pharyngeal without pulmonary tuberculosis, all tend to prove that pharyngeal and laryngeal tuberculosis are both secondary to the pulmonary affection.

This point has an important bearing on your treatment and prognosis.

Now, having regard to the varying frequency with which tuberculosis affects the different divisions of the upper respiratory tract, we have to deal with laryngeal, pharyngeal, and nasal tuberculosis.

The laryngeal being affections of the larynx and laryngo-pharynx, the pharyngeal being affections of the oro-pharynx, including the anterior aspect of the fauces, uvula, and tonsils, and the naso-

pharyngeal including the nasal chambers and the post-nasal space.

Now, oro-pharyngeal tuberculosis usually takes the form of ulceration of the tonsil, lateral band, posterior wall of pharynx, soft palate, or uvula. A grey, pale, translucent deposit first occurs in the superficial layers of the mucous membrane, this subsequently breaks down and disintegrates and forms an ulcer.

Are there any signs, and, if so, what are they, whereby we can distinguish a tubercular ulcer from any other ulcer affecting the pharynx?

A typical tubercular ulcer differs from a typical syphilitic ulcer almost as light from darkness. There must of necessity be all shades and variations in each class of ulcer, and in some cases, no doubt from appearance alone, a right conclusion is difficult to arrive at; but, still, taken with other objective and subjective evidence, a mistake should not be made.

The chief points of difference are the following:

Syphilitic Ulcer.	Tubercular Ulcer.
Deeply excavated.	Slightly excavated.
Few, very red.	Many, very pale.
Granulations.	Granulations.
Deep red, angry, extensive blush.	Pale faint pink, blush. Narrow areola.
Deep sharp-cut edges.	Shallow, irregular and ill-defined edges.
Yellow purulent bloody secretion, abundant.	Pale grey ropy mucous secretion, scanty.
Penetrates deeply and to more distant parts.	Spreads laterally.
No fever.	Fever always.

The site of a tubercular pharyngeal ulcer is usually the tonsil, lateral band, or soft palate. The throat is sore, there is sharp pain, difficulty in swallowing, and the parts are bathed with much glairy tenacious mucus. The temperature is elevated at night to, perhaps, 103° F. There is a loss of flesh and depression.

Some interference with deglutition occurs quite early in the course of the disease. During the early stage, when the parts are first infiltrated, there may be little interference with the functional activity of the parts, but so soon as the deposit matures to the stage of ulceration, pain and dysphagia are prominent symptoms.

These two symptoms are usually associated with

a tubercular ulcer of the pharynx, and, if present, are of themselves often sufficient to make a diagnosis on. If these symptoms are present, and the ulcer is doubtful in character, the balance of evidence would be in favour of tuberculosis. In syphilis there is usually no pain and scarcely any dysphagia.

In malignant disease the pain and local appearances are quite of a different character.

The treatment of pharyngeal tuberculosis resolves itself, in the first place, into combating the pain and dysphagia.

In cocaine and menthol, alone or in combination, we have an agent or resource of great benefit. These drugs in association, in the proportion of thirty grains of menthol, ten grains of cocaine, and an ounce of paroleine, should be sprayed with an ointment atomizer over the whole pharynx, after cleaning the ulcerated surface with an alkaline carbolic lotion. A little cocaine solution, 5 per cent., may be applied direct to the ulcer with a probe and cotton wool.

After such an application food can be swallowed without difficulty, and there is a remission of the stiffness, pain, and discomfort in the parts.

If the ulcer be situated on the tonsils, soft palate, or uvula, its cure should be attempted with one or other of the well-recognised remedies.

A small ulcer might be once for all treated with the galvano cautery. A larger or more infiltrated one will call for equal parts of lactic acid and water, rubbed in with a probe and cotton wool.

A 20 per cent. solution of menthol in olive oil has been highly recommended by some.

The food should consist of bland liquid substances, at a temperature that is most agreeable to the patient. Sometimes quite cold food is most easily taken. A raw egg, whole, with a little vinegar, is in the worst cases the only easy way of administering nourishment, and can be swallowed quite readily. In addition to this, general treatment will be called for, and other symptoms or complications treated as they appear.

Tubercular disease of larynx.—This disease occurs most frequently in adult life between the ages of twenty and forty. Men are more often affected than women.

The first and most frequent site of tubercular disease of the larynx is the covering of the arytænoid cartilages, or inter-arytænoid commissure.

Next to this the aryepiglottic fold, the true cords, and, lastly, the epiglottis.

At first one side only, as a rule, is affected; but subsequently other parts become involved by direct extension or fresh infection.

The effect of the tubercular deposit is to cause tumefaction and pallor of the parts.

One or both arytænoids become club or pear-shaped, the larger ends approximating so as to encroach upon the inter-arytænoid space. The whole larynx, pharynx, and soft palate are usually remarkably pale, the site of the infiltration being of a dull, yellowish gray, smooth in contour, and semi-opaque. Later on minute yellowish points show through the epithelial covering. These subsequently disintegrate and form minute spots of ulceration, which, by subsequent extension and fusion, form the typical tubercular ulcer.

The edge of the ulcer is irregular in outline, and its surface quite flush with the surrounding tissues. There is no angry blush. as in syphilis, the secretion is scanty, and the process is slower, and not so destructive.

Symptoms.—Impairment of voice is one of the earliest symptoms of tubercular invasion of the larynx, due probably to inability to properly approximate the cords posteriorly. The voice is weak, with short intervals, almost aphonic in character. Later on, when ulceration affects the cords or vocal processes, the voice is quite lost.

In rare instances, according to the part first affected, as, for instance, the epiglottis, the voice remains quite good, and full in tone. As in pharyngeal so in laryngeal tuberculosis, dysphagia occurs quite early in the course of the disease.

During the early stage, when the arytænoids are first infiltrated, there is some straining, as the food passes the upper opening of the œsophagus, and a feeling of uneasiness referred to the cricoid cartilage.

Later on there is acute pain and spasm at every attempt to swallow, due to the food pressing upon and squeezing the posterior ulcerated surfaces of the arytænoids. Later on there may be complete occlusion of the œsophagus, with fatal results, as in a case attended by myself in consultation with Dr. Ferguson, of Richmond; when the epiglottis is involved and ulcerated, the cough and dysphagia are most distressing.

Cough is almost invariably present, and is com-

pounded of pulmonary plus laryngeal irritation. It is constant, ineffectual, and wearisome, causing loss of sleep, exhaustion, and depression.

The larynx is very often tender and sensitive to pressure, and the glands in the neighbourhood may be enlarged and painful.

The next stage in this process is increased infiltration, œdema, with consequent narrowing of the air channel, perichondritis, with exfoliation of cartilages, complete loss of voice, and dyspnœa.

Hæmorrhage is a rare occurrence.

Treatment.—With regard to treatment, we must acknowledge that unquestionably all measures of treatment fail to cure the disease, and a fatal termination occurs sooner or later, usually within three years. Local treatment, so far as influencing the deposit, is unsatisfactory in the highest degree.

Heryng, of Warsaw, curettes each ulcer, and applies daily, or every second day, lactic acid. He claims for his treatment most satisfactory results. Speaking as a practical man, it is one thing to tell a surgeon to curette an extremely irritable and sensitive larynx, and another thing to do it.

I find the greatest difficulty often in looking at a tuberculous larynx. Menthol and cocaine should always be applied to the pharynx and larynx before any prolonged examination or operation is attempted.

The two most prominent symptoms, the dysphagia and cough, however, will call one's immediate attention.

In menthol dissolved in parolein, with or without the addition of cocaine, we have an invaluable and harmless remedy. The solution, sprayed with an ointment atomizer, may be used before food is taken, and whenever the cough is troublesome.

Morphia and bismuth insufflated two or three times daily, is sometimes required when the ulceration is extensive and the cough is troublesome. I have found that the larynx will tolerate the menthol mixture sooner than the powders. Morphia may be added to the menthol mixture if the irritation and cough be excessive.

Cocaine pastilles, as sold by Messrs. Allen & Hanbury, containing the one-twenty-fifth of a grain of cocaine, are of the greatest use in allaying the cough and discomfort in these cases.

Menthol tabloids, containing half a grain of menthol, with one-hundredth grain saccharine, half a grain of bicarbonate of soda, sometimes are ex-

tremely useful to assist in soothing the parts and lessening the dysphagia.

Of other powders for insufflation, cocaine with bismuth, also chloride of zinc, morphia, and bismuth are useful.

I prefer a solution, and the application in the form of a spray or cloud, as made with the atomizer. A solution of chloride of zinc (10 gr. to 20 gr. to the ounce) will often be of great use in diminishing the excessive secretion of mucus, and in allaying the sensitiveness, and so the irritability, of the parts.

The treatment of tubercular disease of the larynx by operative interference is not a method that can be undertaken except by the skilled specialist. It is often extremely difficult to get a glimpse of the interior of the larynx, and in these cases impossible to use a curette with any degree of precision or safety.

I show you here Heryng's curettes and other instruments for curetting and treating tubercular ulcers of the larynx, but do not advise you to attempt their use.

Tracheotomy is sometimes called for to meet obstruction to respiration, or to rest the larynx when extremely irritable. General treatment, of course, must be resorted to, and complications treated as they arise.

Nasal Tuberculosis.—You will probably not be called upon to treat this affection. It is very rare, and few cases are on record.

Still, this disease has been noticed as affecting the nasal chambers in two forms: one as a raspberry-like growth, situated on the lower turbinate body, the size of a large pea, and showing a great tendency to bleed. This growth may be mistaken for an anterior hypertrophy, or possibly a vascular papillomatous tumour. The treatment, however, is the same. The galvano cautery, freely applied, will probably effect a cure, and prevent a return of the trouble.

The alternative form in which tubercular disease affects the nose is in the form of a shallow, extensive ulceration, showing many coarse, pale granulations.

This ulcer is said to be difficult to cure, and, like the other variety, prone to bleed.

The curette and lactic acid should be applied freely, or, if in an appropriate position, the galvano cautery may be substituted.

MEETING OF THE SOCIETY OF ANÆSTHETISTS,

At 20, Hanover Square;

The President, Dr. DUDLEY BUXTON, in the Chair.

Mr. BURNS read the following paper :

Cases showing Unusual Phenomena under Nitrous Oxide Gas and Oxygen.

I thought it might be interesting to bring before the notice of the Society four cases of nitrous oxide with oxygen administration ·which have recently occurred in my own experience, as the first three illustrate the advantages of this form of anæsthesia in patients who are unfavourable cases for any anæsthetic, and the fourth shows that alarming symptoms may occur even under nitrous oxide and oxygen.

1. The patient was a man æt. 53, very fat and alcoholic, with aortic disease, albuminuria, diabetes, and a cough. Operation, amputation of poisoned finger. Went under easily and quietly. His colour good at first, then some cyanosis occurred, and the amount of oxygen was increased more quickly. There was some amount of spasm and holding of the breath, which soon passed away, and the breathing after that was deep and regular. It was found that the full amount of oxygen was necessary to keep the colour normal. The apparatus was Hewitt's modified gas and oxygen stop-cock with a. spring valve, by which a large quantity of oxygen can be admitted in a moment. Over fifty gallons of nitrous oxide and about six gallons of oxygen were used. The anæsthesia lasted fourteen minutes, and the patient recovered quickly and quietly, with no feeling of sickness or other disagreeable symptoms.

2. A man aged about sixty with a very deeply seated empyema. This had been opened and portions of two ribs resected three days before under chloroform, which he took very well. A further operation was necessary, as the drainage through the first opening was imperfect. Patient was now much worse, breathing impossible except in a sitting posture, a good deal of cyanosis, and very weak pulse. Nitrous oxide and oxygen was given from an unmodified apparatus, i. e. one in which the oxygen is admitted only by the ten small apertures. The anæsthesia was very good, but the amount of oxygen was found to be insufficient, and it was necessary to raise the face-piece frequently to admit air. The anæthesia lasted about ten minutes, a large opening being made into the empyema, and portions of three more ribs resected.

3. This was another case of empyema in a lady aet. 47. She had a very weak heart, and much cough. Breathing almost impossible except sitting up. The apparatus used was the modified one with spring valve. The anæsthesia was very good. Patient went under easily and quickly, the amount of oxygen being increased rapidly tlll the full amount was reached, and this was continued nearly the whole time. The empyema was opened, and portions of two ribs resected. The anæsthesia lasted just under fifteen minutes.

In these three cases the patients were all very ill, and it is difficult to see what other anæsthetic, except gas and oxygen, could have given such good results.

In the first case, the cough and the alcoholic nature of the patient made ether unsuitable, the probability of a fatty heart made one disinclined to use chloroform.

In the last two cases ether was almost out of the question on account of the embarrassment of the breathing and the cough, while chloroform did not commend itself owing to the feebleness of the heart, and the impossibility of a recumbent position.

In the two cases in which the modified stop-cock was used there was practically no difficulty. The large amount of oxygen admitted by the spring valve was quite sufficient to keep the colour good without raising the face-piece. Indeed, in the first case the colour was considerably better during and after the operation than it had been before.

In the second case, when an unmodified appliance was used, the amount of oxygen was certainly insufficient, and it was found necessary to raise the face-piece several times.

An illustration of the advantage of the modified over the unmodified stop cock is given by the fourth case. The patient was a healthy man aged eighteen, and the operation was Thiersch's grafting. An unmodified apparatus was used. At first, all went well ; anæsthesia was induced quickly, and

the full amount of the oxygen possible soon reached. Then,it. was noticed that the expirations became very prolonged, followed by short and jerky inspirations, and very soon the breathing ceased. The pulse was fairly good, and though there was some degree of cyanosis, it was not excessive—the pupils were contracted. The face-piece was, of course, removed at the first onset of untoward symptoms, and artificial respiration was immediately begun by Sylvester's method—not an easy matter, as the patient's chest was extremely rigid, so that when the arms were brought down over the ribs, it seemed as if one was making no impression whatever. However, after a minute or two, spontaneous breathing began again, and the patient quickly recovered. All the time cyanosis, though present, was not excessive, nor did the pupils dilate. The pulse at the wrist became feeble for a short time, but strong pulsation in the carotid was observed throughout. This, I suppose, was a. case of simple asphyxia, and it may be said that the face-piece ought to have been removed sooner, but the serious symptoms appeared so rapidly, and the cyanosis was so slight, that, until respiration had actually ceased, one hardly appreciated the gravity of the case.

Mr. HILLIARD read the following paper on a case of primary cardiac syncope and a case of spasmodic asthma.

The patient was a male, aged twenty-two, strong and healthy-looking, except for a rather sallow complexion, who had been suffering acute pain in the left ear from furunculosis of meatus. It was decided to open and scrape the furuncle. About three hours after an ordinary breakfast I began to administer nitrous oxide, the patient sitting up in a dental chair. The administration was perfectly natural in every respect, except that pallor was rather marked, so that I quickly increased the oxygen to six per cent. and then to eight per cent.; in a few moments there was a faint tracheal stertor with shallow respirations, the pupils moderately dilated, the eyes turned downwards and inwards and the conjunctival reflex absent. I told the surgeon he might commence, and an incision into the meatus was accordingly made. At this moment the patient turned a deathly pallor, stopped breathing and broke into a profuse perspiration over the frontal region, the pupils widely dilating, with an insensitive cornea. I

immediately removed the face-piece, opened the jaws, with a Mason's gag and pulled forward the tongue, and commenced rhythmic compression of the chest and found that air entered freely, the chair at the same time being tilted back. After what appeared to us a very considerable time the patient again began to commence breathing, also to move his left arm about. Gradually colour and consciousness returned, but the conjunctival reflex remained lost up to this point. As he still looked pale we laid him on the sofa and held ammonia to the nostrils, and gave him some sal volatile with strychnia internally, which had the desired effect. He afterwards told us that he was somewhat subject to fainting fits, although he had rarely actually fainted; that the pain in the ear prevented sleep, and had pulled him down a good deal, and that he had been working hard for his final examination. I can only account for the syncope on the theory of the operation stimulating the auricular branch of the vagus; this theory might possibly account for the symptoms, though it might be considered rather wild. The operation might have stimulated the auricular branch of the vagus, and so caused primary syncope. He had never read anywhere of primary syncope being caused by the administration of nitrous oxide.

A case of spasmodic asthma following the administration of nitrous oxide and air. Mrs. P—, aged thirty-one, six children, had had pneumonia and bronchitis, but was otherwise healthy, except that she was subject to attacks of spasmodic asthma, the last being three months ago, shortly after her confinement—she was still suckling. I was about to administer nitrous oxide for the removal of an aural polypus when the patient asked me if the gas would be likely to bring on an asthmatic attack, I therefore anæsthetised her with more than ordinary care while she lay in the right dorsi-lateral position. A due proportion of air was given with the gas in order that cyanosis and respiratory embarrassment might be avoided as much as possible. The administration lasted some two and a half or three minutes, being perfectly normal in every respect, but during recovery the patient exhibited all the symptoms of spasmodic asthma; this, however, was of short duration, as its acute stage was terminated by inhalations of nitrite of amyl. The patient, nevertheless, remained in a condition of bronchial catarrh.

The PRESIDENT said, as the time had now more than passed when the meeting should be closed, and they had two other papers which promised to be of extreme interest, and as he thought it would be a bad compliment to those who had to offer them to hurry through them in the course of a few minutes, and as there were many who would like to speak on Mr. Burns' and Mr. Hilliard's papers, he thought it would be desirable to adjourn the discussion for the consideration of the concluding papers of the series to the next meeting of the Society, although he was in the hands of the meeting.

This proposition was unanimously carried, and the meeting accordingly adjourned.

A Case of Erythromelalgia with Microscopical Examination of Tissue from an amputated Toe.

—Mitchell and Spiller (' Journal of Nervous and Mental Diseases,' February, 1899 ') report a case of erythromelalgia in which the signs of the disease were almost confined to one of the great toes. Amputation of the toe had been resorted to, although considerable doubt was felt as to the benefit to be derived from the operation. The nerves of the toe were intensely degenerated, and the vessels presented a high degree of arteriosclerosis. The amputated bones were larger than the corresponding ones in a normal adult male. The case reported by Auerbach and the one by Mitchell and Spiller are the only cases on record in which important pathological changes have been found, since the disease was first described in 1872. Drs. Mitchell and Spiller believe that involvement of the sensory fibres anywhere between the spinal cord —or possibly within the spinal cord — and the peripheral ramification is capable, under certain circumstances, of causing erythromelalgia, though hysteria may present similar symptoms.— *Univ. Med. Mag.*, April, 1899.

MESSRS. CASSELL & Co. have just issued the third edition of Dr. Whitelegge's well-known Manual for Students of Medicine entitled, 'Hygiene and Public Health;' the author has incorporated in the text some of the more important recent developments in many branches of hygiene, notably in vital statistics, ætiology, disinfection, and sewage disposal. The established popularity of this book will be further increased by the writer's exposition of the Vaccination Act.

PROGNOSIS IN CEREBRAL HÆMORRHAGE.

THIS must be based on the following factors and on the accuracy with which we can determine them. There are, however, two separate questions in the matter of prognosis : one has regard to the continuation of life, and the other to the extent of recovery from the attack.

The age of the patient.—In childhood the rare cases that do occur are usually severe ; but, if the attack itself is outlived, the natural recuperative power is so great that the person will live on indefinitely. Improvement may be expected for some years, but entire recovery is unusual.

In middle life the outcome depends on the causal trouble and the severity of the apoplectic attack. Where the motor involvement is not great, or is due to indirect pressure, practically complete restitution of all functions is occasionally observed. More often some impairment of the involved area remains. If the primary cause still obtains, this also interferes with recovery and the general outlook.

In senile conditions (tortuous or calcified arteries, dry and wrinkled skin, arcus senilis, &c.), but limited recovery is to be expected. Life may be prolonged, but most depends on the promptness with which the attack is checked. The subsequent length of life depends much on the kindness and care with which the chronic invalid is surrounded.

Nephritis.—Here we must distinguish between unimportant secondary or casual albuminuria and real kidney disease. The latter, when present, limits recovery and determines the eventual duration of life. Even with this complication, however, if the site and extent of the effusion be favourable, the paralytic condition may be fully recovered from.

Syphilis.—The existence of this systemic infection is principally of ætiological importance. It may constitute an indication for treatment, but otherwise has little significance.

Severity and nature of the attack.—This is the great guide to prognosis.

Coma, stertor, vomiting, prolonged semiconsciousness, extensive and complete paralysis, &c., indicate a large effusion with much damage to the

brain, both in local destruction and general shock. Consequently there is immediate danger to life, and much less chance of functional recovery when life is prolonged. In proportion as these features are less prominent the chances for preservation of life and for recovery are increased.

Prolonged high temperature, or a rise to 104° or 106° F., makes a fatal prognosis probable.

General convulsions, as indicative of ventricular rupture (barring uræmia), are a particularly bad omen, death usually resulting in from a few hours to a few days.

Location and size of the lesion. — These two features are complementary. For, though much depends on the site, still a large outpour by its mere volume may include temporarily all the effects of the smaller, and certain general effects in addition.

Pontile hæmorrhages are more often promptly fatal, doubtless from the importance of the local centres and passing tracts. The outpour is also more rapid because from relatively large vessels and close to the parent trunk. On the contrary, hæmorrhages of the pallium (that part of the cerebral hemisphere above the central ganglia) commonly become vast in size before inducing as serious symptoms.

Inequality of the pupils developing as a part of the attack, especially where the larger is on the side of the supposed hæmorrhage, suggests a large focus, and hence points to a more serious condition. This is, however, by itself quite indecisive.

After the acute stage has been tided over, the extent of presumable recovery is the main matter for prognosis. Here, besides the points already presented, other manifestations have to be considered. The state of the tendon-reflexes in the involved area must be determined ; if there is any increase compared with the other side, we can pretty safely conclude that some permanent injury of nerve-tracts will remain, though a slight local increase is not incompatible with apparent functional recovery. Any marked increase of these reflexes— as ankle-clonus or wrist-clonus or a knee-jerk of ten inches say—means lasting paralysis. The occurrence of œdema or contractures in the paralysed part signifies so grave a lesion of the motor path as to preclude hope of recovery.

The anæsthesias that are so frequently present in the early or acute stage rarely prove lasting.

The occasional development of chorea in the affected extremities is in so far a good sign as it indicates returning conductivity of the motor tracts.

The above has been taken from Volume II. of Sajous' ‘ Annual and Analytical Cyclopædia of Practical Medicine,' published by the F. A. Davis Company, of Philadelphia, the first volume of which work has been already noticed in these columns. The teaching thus particularly drawn attention to is from the pen of Dr. William Browning, of Brooklyn, and is only one example of the excellent and masterly expositions to be found in this well-printed and sumptuously-illustrated publication. Volume II. ranges from Bromide of Ethyl to Diphtheria, and represents an enormous amount of work, bringing up to date in a practical form all the more modern methods and ideas, easily consulted by reason of the clear and simple arrangement of the subjects.

HÆMORRHOIDS.

IT is to be regretted that the public as a body are too apt to neglect this trouble and to allow it, whether real or suspected, to drift or run its course, and only to seek surgical advice when pain has become a serious symptom, or bleeding has become more than an occasional accompaniment. This custom is much to be condemned, for hæmorrhoids as a rule are well amenable to medical and surgical treatment in their early stage, and the cases which now pass into the surgeon's hands for treatment would be far less numerous and severe than they often are, whilst in a large number even of serious cases an operation would not be called for. The public are aware that constipation is a prolific cause of hæmorrhoids, and as a consequence they feel quite competent to treat themselves, and so resort to strong medicines, or to the quack nostrums which are so freely advertised and forced upon their notice, or they will consult a druggist, who, because he sells drugs and makes them up, is by some occult process supposed by so doing to have learned the difficult duties of a physician and be competent to advise ; or they take the prescription of a friend who had been treated for this affection, or the domestic pill of a wife or relation for whom the pill had been prescribed by some eminent man

with good effect, but for some trouble which may probably have differed very widely from his or her own. By these means much harm is done, for although hæmorrhoids are caused and aggravated by constipation, the use of powerful purgative medicines, such as most quack pills contain, are in a general way injurious, and are not to be recommended when the sufferer's family medical attendant would certainly, with greater safety and propriety, supply an efficient remedy as soon as he has satisfied himself of the nature of the case he has to treat, for it must be repeated that an affection which is often considered by the public to be hæmorrhoids is frequently something far different.

Purgative medicine for hæmorrhoids, or for any healthy person, ought never to be powerful; where such means are required it is in cases in which the bowel has been brought into bad habits, and must be led out of them by dieting and the careful use of medically-prescribed medicines, for I believe that the free use of quack pills and amateur advice has tended much to the increase of hæmorrhoids. This advice is given with the view of preventing hæmorrhoids, and when they are present of relieving them. Much also may be done by dieting. The too free use of brown meats, such as beef and mutton, is to be condemned, particularly by men or women who cannot take much exercise; and even then it is wise to be more free with fish and birds than with beef and mutton. Any adult who takes two liberal meals of brown meat a day is doing his best to generate hæmorrhoids. Well-cooked vegetables are always good. Much potato is not to be recommended, and anything like freedom with alcoholic liquors is to be condemned. I have known people who have had hæmorrhoids, and some very bad ones, ward off for years, and sometimes for ever, the necessity of a surgical measure for their relief by never taking brown meats, and living on fish or birds in moderation, with well-cooked vegetables and fruit, at the same time avoiding alcoholic liquors. If then under these somewhat grave conditions an affection which has grown to be a serious one can be kept in check, surely by the same means adopted at an earlier stage of its formation equal good may be expected. Experience proves that this may be the case.

It is a very fortunate thing indeed for the medical profession that the valuable drawings on anal and rectal diseases by the late Mr. Gowlland came into the hands of Mr. Thomas Bryant for distribution, because Mr. Bryant tells us in the opening remarks of his book 'On Villous Growths and the Common Affections of the Rectum.' that the possession of these drawings induced him to write on the subject. The usefulness of the work is well borne out in the foregoing instructive remarks on hæmorrhoids which we have taken from Mr. Bryant's book, and the twenty-five excellent blocks illustrating the text are worthy of much praise. The volume is issued by the Medical Publishing Company, Limited, 22½, Bartholomew Close, London.

Decayed Teeth and Tuberculous Cervical Glands.—Dr. Cook has made bacteriological examinations of the mouth with reference to tuberculous infection in two hundred and twenty cases. While he does not say that all tuberculous infection of the lymphatic glands of the neck takes place through decaying teeth, he thinks it very significant that the pulp canals of such teeth often become tuberculous, since, by reason of the close anatomical connection of the lymphatics with the teeth and with the mucous membrane of the mouth, the canals may readily become the portals of infection. Dr. Cook gives succinct accounts of eleven cases in which tubercle bacilli were found in or about decayed teeth. One of them was that of a girl, seventeen years old, who had been in rather poor health for some time, and whose teeth had been somewhat neglected. The first and second right molars of the lower jaw were badly decayed. Bacteriological examinations were made on several successive days. On the third day a tuberculous focus was found in the second molar. After several more examinations, at intervals of a few days, the teeth were extracted. Five weeks later the girl returned with a small nodule at the lower border of the inferior maxilla. Dr. Cook told her it was probably tuberculous, and advised her to consult a physician at once. Her physician adopted local treatment, and assured her that the trouble would soon pass away. However, other nodules began to form, and she consulted another physician, who advised an operation for the removal of the glands. But this advice was not followed, and when last heard from, having left the country, the girl had pulmonary tuberculous disease.—EDITORIAL, *New York Med. Journ.*, April 8th, 1899.

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AN ADDRESS DELIVERED BEFORE THE ABERNETHIAN SOCIETY,

St. Bartholomew's Hospital, February 16th, 1899,

By W. S. A. GRIFFITH, M.D.Camb., F.R.C.P., F.R.C.S., &c.

GENTLEMEN,—I think you are indebted to Mr. Douglas for these—I will not call it a paper—but for these few notes, and from what he said, he seemed to think that the luxuries of practice in the slums of Clerkenwell somewhat unfit men for the hardships of private practice.

You will not expect me to-night to give anything in the nature of a lecture on midwifery ; that is not my intention at all. My object is to point out three or four particulars in which you may be of greater use to your patients when you are attending them in their confinements. I spoke to a lady to-day, whose baby has recently been born, and told her and the nurse that I proposed to say something here this evening on the subject. The lady said to me : " Do, for goodness sake, tell the men that, though they can never have babies themselves, and they can never realise what their wives or their patients suffer, try and impress upon them the necessity for very great consideration for their patients." And I would begin my address to you with that, and I am certain it only requires mentioning in order to make it quite plain to all how necessary is such consideration. When I got to this lady in the middle of the night she was almost insane ; it is true she is an Irishwoman, and that may, perhaps, have made her more excitable, but you have to take into consideration your patient's feelings, and her state of mind when she passes through the physiological performance, as we call it, of the birth of her child.

When a patient comes to ask her doctor to attend her in her confinement she has two or three questions to put to him, unless he knows beforehand what to say to her. If she has not already consulted her nurse, the first thing she will want

to know is the probable day on which she will be confined. I was trying this morning to find Dr. Matthews Duncan's lecture before this Society on that very subject, but was unable to do so; but, so far as I recollect, the subject of the first address he ever gave to the Abernethian Society was the prediction of the day of confinement. It was an exceedingly valuable address, and was delivered at about the time I was house physician, in 1878 or 1879. I would suggest to the officers of the Abernethian Society that it would be an advantage if an index of the more important papers, certainly of all the papers which are recorded at all fully, was made, so that any paper could be readily found in the transactions of the Society. Unfortunately the index of the hospital reports does not include these addresses. I will not go into the very important subject of the prediction of the day of confinement now; it is one which you will learn from Dr. Champneys, in his systematic course. It is very important to get as accurate a date as we can. The plan taught by Dr. Matthews Duncan is by far the simplest, and it is as accurate as it can be. There are all sorts of error to which any of us are liable, but we are less liable to them if we are careful of our details. Prediction of the day of confinement involves another matter. If you settle that the probable day of the patient's confinement is to be, let us say, June 1st, you know that that may involve an error of at least a fortnight, if not three weeks. Therefore we take that as the middle day of a fortnight, and inform our patient that if she *does her duty*—I always put it in that way—she will be confined on that day, or not more than a day or two before or later. Then she will ask you on what date she is to engage her nurse? That point as to when the nurse is to enter the house is one in which you must assist her, but it is a matter on which each patient will have her own ideas. For instance, in London, if the patient is fairly well-to-do, it is not desirable to have the nurse in the house many days before the confinement; in my opinion, it is not desirable to have her in the house at all until labour actually begins, because there is no difficulty in housing her elsewhere. But in the country it is a different matter; the patient may be some miles from her doctor, and the nurse may be in quite a different part of the country, and it is very important that the

nurse should be there at once if the doctor is not. Therefore, if the patient be fairly well-to-do, it is advisable to have the nurse a few days before the expected day of confinement. With the poorer classes remember that these are matters of pounds, shillings, and pence, because the nurse is paid so much for the month that she is with her patient, and each additional week has to be paid for. In other cases, where expense does not matter so much, the only desire is to have everything done as well as possible. The nurse is a very important person, and she finds that she is, and sometimes she gives a great deal of trouble, and upsets the house altogether. But, apart from that, the fact of a nurse waiting in the house gives the patient an idea that she has got something very serious to go through—it increases the dread of her confinement. Moreover, the nurse is a woman, and women will talk. I shall have something to say later about the selection of a nurse, but it often happens that the less a nurse knows the more she talks. She has a habit of telling her patients of all the dreadful things that have happened to all the patients she has ever seen, the more patients she has nursed the more numerous are the dreadful episodes, and the more complications she can relate, so much the more she thinks this to be to her importance as an experienced nurse. It is, however, difficult to stop them talking in this way, because the patients are women, too, and they will talk, and they like to hear about these things. And not only that, but the patient's sister or mother, or female friends who come to see her, have a similar tendency to talk about all the serious cases they can think of; how Mrs. So-and-So died of fever; how another died of hæmorrhage; how a third tore herself at the time of her confinement; and this sort of thing goes on until the patient is really in a state of great alarm. When the patient asks, "Shall she have the nurse in some time beforehand?" there is no doubt that you should advise her not to do so unless she is so far from the doctor that it would be difficult to get him there in time if the labour came on rapidly. But the nurse should be engaged for a week before the probable date of the confinement, and told to hold herself in readiness from that date.

Next we come to the very difficult point of the choice of a nurse. Nothing but personal expe-

rience of nurses can really help one very much in this matter, but I can give you two or three hints. You will very soon find out that a patient regards her nurse from a perfectly different point of view to your own. We look upon a nurse as satisfactory when she carries out our orders properly, and when she performs her medical and nursing duties to our satisfaction. But your patient may like, and love, and hug a woman who will be the most incapable nurse who ever walked, simply because she happens to make herself pleasant to the patient, and does not upset everybody else in the house. You will find there are three qualities necessary for good monthly nurses. I should have liked to have seen some of our nurses present, for it is always well, when it can be managed, for doctors and nurses to meet and discuss a common subject, and for them to learn to understand each other and each other's point of view. At Queen Charlotte's Hospital, when we go round the wards I put questions to the nurses as well as to the medical men and students, but I do not expect the same kind of answer from all; I put the questions to the nurses from the nurses' point of view of the matter, and I put it to the students or qualified men from their point of view, and thus the nurse learns to understand what we expect of her. But before I go on to speak of the three qualifications necessary for a good nurse, let me just exclude a large number of women who practise as monthly nurses, but have no proper qualification to do so. I always style them "washers of babies," and, indeed, they do it very fairly well, and there is very little more that they can do well. It is something to wash a baby well, and it is more than most of you have learnt to do, as you would find out if you tried to do it. There are some nurses who really deserve no better title than baby-washers. But if we exclude the ignorant, kind-hearted person, who, having had babies of her own, thinks she is thereby qualified to nurse any woman through her confinement, we come to the nurses who have had some degree of training, and you will at once see that they need the three qualifications I am going to mention if they are to rank as really good nurses. First, the nurse must understand her duties to the mother. I do not know any nurses trained in lying-in hospitals who are not taught that duty more or less well, and you can hardly appreciate

what that means until the absence of a nurse makes it imperative for you to perform her duties, just as the nurse may have to take your place during your absence at the critical time of delivery. So you will find that most fairly trained nurses can do their duty towards the mother fairly well. The next qualification, which we often find absent, is to know well their duties towards the baby. If there are any present who have been with me at Queen Charlotte's Hospital, you will know that if there are two or three babies crying when I go into the ward, one of you will be deputed to handle and try to quiet it. When you have spent a few minutes dangling, coaxing, and patting, and going through all the rest of the performance which is supposed to be necessary to quiet an infant, you will, especially if you watch the faces of the nurses during the operation, learn that there are things to be learnt even in so simple a manner as that. When you come to the higher branches of nursing you find that most nurses know exceedingly little about the duty to the baby, even of those nurses who have been well trained. The feeding of the baby, the preparation of its food, and matters of a like kind are much more complicated and so much more difficult to learn that after you have been in practice a few years and know the capacities of many nurses, there will be only one or two whose judgment and experience you would feel you could fully trust in with a baby ill or delicate; it is rare to find a good nurse for a baby, though there are plenty who can be trusted with the mothers. That is partly because they are ignorant and careless with babies, and partly because the older ones are often imbued with notions which are fatal to the well-being of the baby. There is the soothing-powder nurse, who likes to get her own sleep by putting the baby to sleep with opium or bromide or powders containing some such drug, or by giving them brandy. Therefore, when you you find a nurse who can be trusted with babies, mind you take the greatest care of her; get her to every case you can, she is worth anything. If you are in difficulties in any case with a delicate baby, you will not do wrong in applying to the matron of a children's hospital, such as that at Great Ormond Street, and asking her to recommend you one. In that way you will probably get a nurse who is very satisfactory. But that, of course, is not often practicable. What are

you to do in ordinary circumstances? I advise you to pick out a nurse who has been a good domestic nurse ; she will not necessarily have been highly trained, she will not be such a nurse as we see in this hospital, but she will be the best nurse for your young, delicate baby. The best nurses for babies are, with few exceptions, those who have been well trained as domestic nurses, and I should be very sorry if, in the evolution of the monthly nurse, that class of woman were to die out. In the years that I have been connected with Queen Charlotte's Hospital, the whole class of monthly nurses has changed. They were, a few years ago, mostly uneducated, common, vulgar, lower-class women, and servants who had lost their places from one cause or another. Now there are many ladies ; and if you walked round the wards of Queen Charlotte's Hospital you would be surprised how many who, I will not say excel our nurses at St. Bartholomew's, for that is not possible, but are equal to them both in education and enthusiasm for their work.

But there is a third qualification necessary in the nurse, and that is the one which the patient herself appreciates the most. It takes an observant and experienced mother, who has been through the pains and sufferings of labour and of the early efforts at suckling her baby, to appreciate a good nurse from an indifferent one. But when her confinement is over and she recovers her strength and looks back, she says, " That is a good nurse, everybody in the house liked her." Perhaps she ought to add, but does not know, " except the doctor, who found her quite incompetent." The mother looks at it in this way, " How does this nurse fit in with my servants and in the general arrangements of the house ?" That is a thing one has to look to, because if you or I recommend a nurse, and that nurse turns out to be very good as a nurse, but she upsets the servants in the house, and will do nothing for herself, and is disregardful of the comforts and ordinary customs of people in the house, she certainly will not be a success. If you find a woman who combines these three qualities—knows how to do what you tell her to do, knows how to take reasonable responsibility for the mother and for the baby, and fits in with the conditions she finds in the house, you have got an exceptional nurse, of whom there are not many. I think you would be a little surprised if I were to tell you whose fault it is that so many of the best class of nurses are spoiled. It is not the doctors who spoil them, but the patients themselves. It happens to me quite commonly, and I suppose it does to everybody else, to say to a lady, " Mrs. —— you are spoiling my nurse ; you are absolutely ruining her." They do it in this way : a patient who has a nurse in her house constantly nursing her night and day for a month is herself very grateful if the nurse has been altogether satisfactory. The advent of the first baby into a house where there are means is a great event. If the baby dies, or if anything happens to the mother, there is grievous disappointment. If, on the other hand, everything goes right, and the little difficulties are successfully met, the nurse is looked upon as a perfect treasure, and nothing that wealthy people can do seems to be too much for them to do for their nurse. She is photographed with the baby,—and that is no small matter in the house of great people, at any rate it is a great thing for the nurse—the ordinary servants are not admitted into the drawing-room in the way that the nurse is, and they are not given jewellery, watches, and other ornaments, fivers, and little trifles of that sort. It goes on until the mother looks upon the nurse as someone she can believe nothing wrong of, and whom she cannot do too much for. Now, what is the effect on the average nurse who, having nursed in some wealthy house as this, has her next engagement where the people are comparatively poor, or, possibly, not generous? At once something goes wrong ; she is not treated in the same way as she was at the other establishment, and instead of quietly going on with her work she becomes too great for her place, and has to leave. One has known some of the best nurses gradually come to grief through this spoiling by their own patients. It is one of the things on which we doctors should give advice just as firmly as on other medical matters : " Do not spoil your nurse." In my description of the nurse I am not at all exaggerating, because I have one in my mind's eye now, one of the best nurses I have ever had, and I asked the husband to speak to his wife, and ask her not to do too much for her, because, unless the nurse be very wise, she is apt to get rather worse than better.

So when you are responsible for choosing a good nurse you will not find it by any means an

easy matter. The few you know who are really good will probably all be engaged, because, as soon as the woman who has employed one of these misses her first monthly period she sends off and secures the nurse at once, so that anyone who comes afterwards is too late.

I have one thing more to say about the choice of a nurse, and that is that personally I advise a patient always to get, not the youngest doctor, but the doctor most recently trained rather than the oldest, and so also I advise that the nurse should be one of those recently trained rather than an old one. If any of you can look back twenty years and see the training most medical men had at that period in midwifery, and in the use of antiseptics, you will see that safety is unfortunately greater in the inexperienced young practitioner who has learnt his principles of midwifery, and knows how to use antiseptics, rather than in the most experienced older man, who has had little or no real training in the use of antisepsis, and who has never been trained in the principles of either. It is the same with the nurses. If you are in difficulties in obtaining a nurse, you would rarely be wrong in sending to the matron of the nearest lying-in hospital, asking her to recommend you one of her recently-trained nurses; you are then more likely to have satisfactory results than by getting the oldest and most experienced person.

Now there are other matters which you will do well to consider. One is sometimes asked as to what room shall be chosen—I am speaking of sufficiently well-to-do people,—but there is very little to say about it, except take care that you get a quiet room—one which is well aired, and which at least has not a water-closet opening opposite the door. It is a very common thing in London houses— Harley Street is one of the worst in this respect— to have vile sanitary arrangements. I have seen houses to let in Harley Street and Wimpole Street where leaders of the profession have lived, in which the sanitary arrangements are frightful. But in spite of those errors in sanitary arrangements, you will find that the mortality under our extern arrangements here in the slums of Clerkenwell and of the West-end of London is very low indeed. You must agree with me, therefore, that safety depends more on antisepsis by the attendants than on the drains, and that nothing is so important as the adoption of per-

sonal antiseptic precautions. At the same time, it is just as well to avoid certain dangers; and it is a danger in certain conditions of sanitation to have the closet door close to the room in which a patient is to be confined. If the confinement is to occur in the winter, let the room face the south; if in the heat of the summer, let it be one which faces in the opposite direction. There is little in the detail of the room which is of importance; but there is one point which is advantageous, and that is the bed. It is common enough to find that the bed in country places is the old-fashioned double one. There is something about that bed which makes the patient feel that it is her duty to be confined on it, because it was the one on which her mother and grandmother and several past generations were delivered of their children. I advise you to get rid of that big bed, and let the patient be confined on a single small bed. It is very desirable to have the big bed taken away, and a small one put in its place. Any one who has had to manage a difficult case on one of these big beds will at once appreciate the advantage of having a single one.

Another thing which differs a good deal with different men and in different circumstances is the following. In London, where the people are fairly well-to-do, the doctor who is engaged to attend the case does not, as a rule, dispense his own medicines. If he is in the country he either brings or sends in the drugs which he will want. In my opinion if he is a wise man he will have them in the house a month or six weeks before they are wanted. If he does not do so he may forget them. In London it is easy for the doctor to write a prescription, which is sent to the chemist for the things that are required, and very few things are wanted. You want chloroform, ergot, an antiseptic, and in a few cases a solution of nitrate of silver. The latter is of the highest value, as some of you know, for the prevention of ophthalmia, of the strength 5 grains to the ounce; but it is required only in a few cases. You want cotton wool; you must see that the patient has a proper douche-can, a proper bed-bath, which is a sort of glorified bed-pan, so that the bed is not wetted by the use of the douche. She, of course, also requires ordinary mackintoshes and dressings and pads, and so on. I want to say a word or two about these things, chiefly about chloroform and ergot.

If chloroform be given through a proper inhaler, a small quantity, two or three ounces, will be found sufficient for all ordinary cases. That may seem a very small matter in hospital, but it is a very great matter when you are called in a hurry, perhaps in the middle of the night, and are not within miles of your surgery or the chemist, and all you have with you is two or three ounces of chloroform. There seems to be a recognised custom that during labour chloroform is to be administered on a handkerchief stuffed into the tumbler which is used ordinarily for washing the teeth. I suppose nine out of ten women who have chloroform during labour have it administered in that way, or else given simply with a handkerchief or with a towel. Of course there is no more wasteful way of using chloroform, and when you are single-handed, in the middle of the night, perhaps far away from your supplies, and you have to keep the patient under chloroform two or three hours, you will find that to use the chloroform economically is of great importance. I show you the apparatus which I generally use; it is practically a simplified Junker's inhaler. The bottle contains one ounce, and I rarely have to fill it a second time in any one case, even if it be a long labour. This one was made for me by Krohne & Co. The inhaler consists of a metal frame with a piece of flannel stretched over it, and is connected with the usual bottle and bellows. The bottle is hung by a loop of tape on the back of the patient's bed out of the way. As soon as a pain comes on, when I think it desirable she should have chloroform, the patient takes the inhaler into her hand and places it over her face. I sit on the chair, and quietly squeeze the bellows, and the patient becomes unconscious as the pain increases to its climax. That is all that is necessary. All that the patient wants is to be relieved of the severity of the pain.

She may abuse you for not giving her more, but that serves you right, you should give her enough to prevent that, and a little practice should enable you to do so. In this way half an ounce to an ounce of chloroform will last you a very long time. When the time comes that the child is about to be born, and the pain is most severe, then is the time to press the chloroform a little more. As soon as the child's head or its head and shoulders are born the chloroform must be stopped in most

cases. The uterus shrinks down and there is no hæmorrhage as a result of the chloroform being given. An apparatus such as I show you is perfectly safe, and is really of the greatest possible value as well as economical. If you give chloroform to a patient in labour in the same way as you would for an operation, you would arrest the action of the uterus and delay labour very greatly and increase the risk of post-partum hæmorrhage. This is a subject over which I could very well spend a good deal of time, but I must not do so now.

Next with regard to ergot. I am not much given to recommending special forms of drugs; but I have one form to recommend to you, because of all drugs which are uncertain ergot is assuredly one of them. What I find acts well is a preparation sold by Oppenheimer & Co. under the name "ergol." It is a preparation which I value because it can be used hypodermically without any bad results or you can give it by the mouth. When a patient is under chloroform you will not give her ergot by the mouth, however much you need it, and by the bowel it is absorbed very slowly.

With regard to antiseptics, every man must have his own favourite. I have entirely given up carbolic, because it makes my hands more rough than any other. I use perchloride of mercury, or—entirely on Mr. Lockwood's recommendation—biniodide, which can be procured in soloids. One of these put into a pint makes a strength of 1 in 1000, and it is as good an antiseptic as you can have. I would make one or two remarks on the use of antiseptics. It is of no use having the finest antiseptics in the world in the next room when you want them at the bedside. When labour is advanced to the second stage, then is the time to have your basin of antiseptic at hand; not in the dressing-room or in the bath-room, but close to you on a small table or on a chair, and to dip your right hand into it every few moments. If you have to go out of the room and disinfect your hand every time you want to make an examination, you will leave your patient at a critical time; or if you do not leave her, you will not disinfect your hand. Your coat is off, and the shirt-sleeves rolled up. You take your seat near the patient, and every time you make an examination your hand is dripping with the antiseptic. In the basin you have

ten, twenty, or thirty tufts of absorbent wool to use as sponges. I tear off pieces from a bundle, and leave them in the disinfectant. Into that fluid you can put your catheter, as you will probably want it, and it is then ready for your use whenever you may want it. On a table you will probably put the things which the nurse wants—ligatures for the cord, scissors, chloroform, ergot. And mind you have these things ready. Perhaps, when you get there at two o'clock in the morning, the nurse has not got the douche ready; perhaps she has not unpacked or washed it. Perhaps she has got no water at 117° for the douche to stop post-partum hæmorrhage; she may have to go to the kitchen at the last moment from the top of the house. Such a nurse as that is not much good. It is your business to see that these things are prepared in time.

There is another thing I am going to show you, which also is in the nature of, I will not say an advertisement, but of a recommendation; that is to say, a large woodwool or other sanitary sheet. I asked the Woodwool Company to send me a specimen of their sheeting, and they have been good enough to do so; it is of the greatest comfort and use. I pass round the specimens. It is merely absorbent wool in gauze. There are various other makes of equal value to this. These sheets are pinned under the patient with safety pins, with the patient lying close to the edge of the bed, and when the discharges are constantly coming away as they do in labour, they are absorbed by this woodwool. The ordinary draw-sheet may or may not be clean, and it does not absorb as this kind does. They are not expensive, even for poor people, and two or three of them are economical for everybody. I have also received some diapers made from the same material or with the common gamgee tissue. They are required of good size during the first few days.

In order not to take up too much of your time, I must omit all reference to the management of the lying-in, and the whole of what one may call the management during pregnancy. But there are many things of value in these subjects, and if you think it worth while I will come on another occasion and discuss them.

When your nurse is engaged, if she knows your ways and methods, she does not want to bother you with many questions. If she does not know you, and has never nursed under you, and if she is a trained nurse, she will come and ask you what you expect her to do. She will ask you when you wish to be sent for. From one point of view, the answer to her is as simple as possible—as late as possible, not by any means till you are obliged to. But the nurse has got her duty to her patient to think of, as well as your convenience, and she has to satisfy the patient as well as the doctor. She requires, and ought to have, precise instructions as to when she is to send for you. The directions I generally give the nurse are these: "Let me know when labour is begun." That sounds simple enough, but how many of you could tell, if you were present, whether labour has or has not begun? Therefore, if your nurse makes mistakes, do not be too hard on her if she call you out at the wrong time. You may find that the patient has only got spurious pains. If you are living far from the patient, you may have to waste a good deal of time, and you cannot help it. If you are living near the patient, go and see her; she will be very much more satisfied. Many people think that the doctor's arrival will be followed soon after by the baby, not understanding the long delay of the first stage. Then you explain the matter to the husband. The next point is much more important, namely, when do you want to be sent for? It is one thing to be informed that labour has begun, but when do you expect to be sent for? A great deal depends on that, because if you get there too late, the patient and her friends naturally complain. Perhaps they will blame the nurse, or perhaps they will blame you; most likely they will blame you both, and altogether things will not be quite comfortable. Therefore, however inconvenient it may be, get there in time. You know that labour is very uncertain, one may go dragging on for a long time, and another is over in a very few minutes. Therefore give instructions that you are to be informed when there is a first discharge, or the ordinary "show." That is the most reliable sign of the commencement of labour that we have, but like other things it is not absolutely to be relied on. It is very rarely wrong when it occurs, but it does not always occur, and that is the difficulty. The commencement of the second stage of labour is the time when you should be sent for, but how many of you could tell when the second stage of labour begins? And it may be that the nurse will ask how is she

to tell when the second stage has begun. You must be able to tell her. It is known by the change in the character of the pains. Tell her that as soon as the membranes rupture, and the water is coming away, she must send for you.

We come to still another point, and that is, are you to examine your patient before the commencement of labour? How much examination is necessary afterwards? I advise you always to endeavour to persuade your patient to allow you to examine her a month or six weeks before her full time. The advantage of it if anything is abnormal, if you can diagnose the condition, is enormous. The recognition of a contracted pelvis, the recognition of a simple common breach presentation, are very important Do any of you realise what it is to a woman who, perhaps, marries at thirty-five, after a long engagement, whose first pregnancy follows three, four, or five years afterwards, after a good deal of waiting, after nine months of discomfort, and after a dangerous labour, to have a baby born dead? There is no greater disappointment to a woman in the majority of cases; it is a disappointment which affects her health for months, and one which might have been avoided. I just put the other side of the question. A doctor has recognised something wrong, has seen it and dealt with it, and, with little or no danger, a living, healthy child is delivered. And see what a difference it makes to your reputation as a doctor. Why should not that examination be made in every case? Simply because people are not accustomed to it. A woman says, " I have had several children, and So-and-so was my doctor, and he never examined me." Lucky for her, perhaps, that he never did, he might have poisoned her. Most of your information can be gained by an external examination. You can explain to your patient what the examination is, and what it means. Only during the last few days a nurse, in whom I have some interest, has been to see me because she was sent home from Italy, where she had gone to attend an English lady in her confinement. She was sent home, at a few hours' notice. by the patient's husband, because the nurse allowed the doctor to make an examination before the confinement. I mention that to show you what the feeling of some people is against any kind of examination. They think it absolutely unneces-

sary, just as they think it unnecessary to put a stitch into a torn perineum. " Dr. So-and-So never sewed me up, with all my children, nor any of my friends." No, he did not know how, that is why he did not do it, but they do not always realise that. You should never omit to do it, a man who does not do it is to be blamed. There can be no question at all about the fact that an examination should be made. But you have to consider your patient's feelings. If you have a young married girl, whom you are going to attend, she does not know what it is to go through these examinations; it is altogether foreign to her, and you have to consider her feelings as tenderly and carefully as possible, and at the same time you must explain to the mother, or female relative, the absolute necessity for some examination. and then make it as completely as you are able to do.

There is one other thing I will mention, and then I must finish, namely, warning the friends of complications. If you wait till the child is born dead before you warn the husband, or the mother, or the mother-in-law, whoever is the responsible person, that the difficulties may involve the life of the child, they will conclude that you did not know of the difficulties yourself. If you have a breach case, it would be obviously to your interest to explain to the husband or some responsible person that the child is not lying in the best way, that it is too late to rectify its position, and that it increases the risk to the infant, but not to the mother. If you have to deal with a prolapsed cord or a mere occipito-posterior case, you do not want to magnify the dangers, but point out the difficulties beforehand. If you are able to get over these difficulties successfully so much the better, and so much more to your credit. But doctors are often unfairly blamed, not because they did not recognise the difficulty that was coming on, but because they did not mention it to the husband or the friends. But be sure to keep the prospect of complications absolutely from the knowledge of the mother : that is a highly desirable thing.

'THE RIFORMA MEDICA' credits the following prescription to Decoopman for use where there is an intolerance of salicylate of sodium : ℞ Salicylate of lithium, 7½ grains; sulphate of quinine, from 1½ to 3 grains. For one powder. Four daily.

A CASE OF SPASMODIC TORTI-COLLIS ASSOCIATED WITH CHOREA.

By E. NOBLE SMITH, F.R.C.S.Edin.,

Senior Surgeon to the City Orthopædic Hospital and Surgeon to All Saints' Children's Hospital, London.

THE patient whose case I am about to describe was exhibited at a meeting of the Harveian Society on Thursday, April 6th last. She was shown as an example of the amount of paralysis following section of the spinal accessory nerve, and therefore the other features of the case were only mentioned briefly. The patient, Miss J—, was brought to me in January, 1894, she being then 16 years of age. She was suffering from spasmodic action of both sterno-mastoids, the head being spasmodically drawn forwards and downwards, but chiefly to the right by action of the left sterno-mastoid. There were also choreic movements in other parts of the body, especially in the arms. The chorea had commenced eight years previously, but the torticollis had not been noticed until three months before her visit to me. The patient was thin and anæmic, and her general health very defective. There was pain upon movement of the cervical vertebræ, œdema in the region of the upper three vertebræ, and a certain amount of rigidity of that part, and the pain was evidently aggravated by the almost constant spasms.

As spasmodic torticollis is an affection coming on generally much later in life than the age of this patient, I was inclined to attribute its cause to some definite condition, associated probably with caries of the vertebræ, a view which was supported by the presence of the pain, œdema, and rigidity in the region of the upper vertebræ. I therefore applied an apparatus to support the head and neck. A good effect was almost immediately produced, the pain was relieved, the spasms were controlled to some extent, and altogether the patient seemed to derive very great benefit from the treatment. The symptoms of chorea passed off in the course of some weeks, and the rigidity and œdema also disappeared. In the beginning of December the patient appeared to be quite well, with the exception of the torticollis, which,

however, was now almost entirely confined to the left-sterno-mastoid and the posterior rotators on the right side of the neck. On December 17th, 1894, I removed about half an inch of the left spinal accessory nerve, and produced complete paralysis of the sterno-mastoid and upper fibres of the trapezius. The patient made a good recovery from the operation, and was able to keep her head at rest. A year and a half later (June, 1896) the spine (which had been curved by the torticollis) was straighter; the patient had improved in general health very greatly, had lost her anæmic appearance, and was in good spirits. There was no spasm whatever in the left sterno-mastoid, although the power of this muscle had returned six months after the operation. There still remained, however, spasms in the splenius capitis of the right side, causing the head to turn in the same direction as before, although with less severity. On June 11th I operated again, removing about half an inch of each of the external branches of the posterior divisions of the second, third, and fourth cervical nerves. On the 15th, the wound had entirely healed, and there were no spasms, and the patient could sit up in bed with the head perfectly straight.

At the commencement of the present year (1899) this patient, although continuing in fairly good health, was wanting in muscular development, and her general health was not so good as could be wished. The spasm in the sterno-mastoid on the *right*, which had existed to a slight extent when I first saw her, had increased. I therefore advised a course of special gymnastics, which included passive and active movements of the body generally, and also of the neck; also daily massage. Under this treatment the health improved rapidly, so that in about six weeks she was apparently quite strong and robust—a condition which she had not previously attained to. She was now perfectly well with the exception of the spasm in the *right* sterno-mastoid, which was in no degree better. I therefore operated upon this nerve, removing about a third of an inch. (It was the left spinal accessory that had previously been divided.) She made a rapid recovery, being able to be up and about on the sixth day after operation. She was shown to the Fellows of the Harveian Society on the twelfth day after operation (April 6th, 1899), and there seems every prospect of a good recovery. It may

be · stated, however, that there are occasionally slight spasms in the left sterno-mastoid and left platysma, but these seem to be subsiding. ·

This case is remarkable, first as regards the age. Most cases ·of spasmodic torticollis have been found to occur between the ages of thirty and fifty years, and a few between twenty-five and thirty. Sir William Gowers has only seen one case at an earlier age than twenty-five, the spasm having commenced at thirteen, and still continuing at the age of twenty-nine.* In the case I record it is interesting to note the early return of power in the paralysed muscle after the first operation, commencing six months afterwards, and being fully established a few months later.

It is to be noted in the case I am now recording, and in all others that I have operated upon, that there has been no inconvenience to the patients from loss of muscular power, and no appreciable deformity from the paralysis.

This is the nineteenth operation of this kind which I have performed for spasmodic torticollis, and the result has in all cases been satisfactory. There was one instance, previously recorded by me, of a patient who suffered from extensive spasmodic movements of the head and face, whose case was very unpromising from the first. The operation upon one spinal accessory relieved the symptoms for a period of nearly two years, when they returned again ; and subsequent operations upon this patient were of little or no value. We cannot class this among the typical cases of spasmodic wry-neck ; but to be strictly accurate in one's records, I have thought it desirable to again refer to it.

In distinguishing between true spasmodic torticollis and torticollis—the result of caries of the cervical vertebræ—it is commonly stated that the latter condition is simply due to holding the head sideways to ease the pain caused by the disease ; and this, doubtless, is often the case. I have, however, seen instances of a distinct spasm in the neck muscles, due, apparently, to the caries—a condition which has been relieved immediately upon fixation of the head and neck; and I assumed that such might be the case with the patient whose history I have given.

The large number of muscles with which the neck is furnished, and the variety of sources of their nerve-supply, enable the patients upon whom neurectomy has been performed to hold their heads straight, and to suffer little or no inconvenience from the loss of either the sterno-mastoid or the splenius capitis and its adjacent muscles. This large muscular supply in the neck also explains the fact that, after paralysis of one sterno-mastoid, there is no inclination of the same muscle on the opposite side to act in excess of its ordinary range. Sir William Gowers remarks * upon this point that "among the ·causes of torticollis commonly described is paralysis of the muscles of one side, permitting their opponents to draw the head to the other side," whereas he considers that "this is a theoretical cause which has little counterpart in fact." It is doubtful, he writes, " whether a true paralytic torticollis is ever seen, the amount of muscular action that is needed to keep the head at rest being extremely small," and the rotaters, being numerous, are never all paralysed.

In none of the cases in which I have operated have I seen any difficulty or deformity arise from the paralysis induced, and even in a case of severe retro-colic spasm in which I had to divide the spinal-accessory upon one side and the second, third, fourth, and fifth posterior cervical nerves on both sides, the patient only admitted feeling a certain degree of general weakness in the neck, which a month after operation was, she stated, rapidly becoming less troublesome.

As to the pathology of these cases, there is much obscurity. I have had pieces of nerve, which I had removed, examined by pathologists, and nothing abnormal could be found in them (which was not surprising), and in the case of severe general spasms of the head and neck, which I have referred to above, and which was only temporarily benefited, the patient subsequently committed suicide, and I was able to obtain his brain and medulla. The parts were most carefully and thoroughly examined by Dr. Risien Russell, and no trace of anything abnormal could be found. Other pathologists have made similar experiments with the same results.

As to the question of hysteria, it is difficult for me to believe that it is possible that such could have been the cause with patients in whom the

* The instances of spasms in the neck occurring in young children are excluded as they are quite temporary in character and dependent upon reflex irritation. ·

* 'A Manual of Diseases of the Nervous System,' by W. R. Gowers, M.D., F.R.S. Second edition, 1895.

spasm of one muscle, or one set of muscles, has continued persistently for years (in one case for sixteen years) without any cessation, and in whom, moreover, after operation all trace of the affection had ceased.

It has been stated that division of a tendon of a sterno-mastoid in a state of spasm should be practiced in preference to neurectomy, but on this point I think we must agree with Sir William Gowers that for an active spasm " division of the tendon is worse than useless; that it permits the muscle to shorten, but it does not check the spasm, and the greater the contraction of the muscular fibres, the greater is the pain occasioned by the contraction." In one case which came under his notice where this operation of tenotomy had been performed, he found the patient's suffering and also the spasms were much increased, and the affection had spread to other muscles, possibly, he thought, in consequence of the increased pain.

Further, referring to the spasms occurring in the splenius, complexus, &c., Sir William Gowers states that " it has been shown by Keen and Noble Smith that this spasm may also be reduced to a slight degree, or removed, by the subsequent division of the posterior branches of two or three of the cervical nerves supplying the muscles involved." " Neurectomy," he states, " is certainly the most successful method yet employed in the treatment of torticollis."

Note.—Since recording the above case, I have operated upon a patient, Miss H., aged twenty-eight, by neurectomy of the external branches of the posterior divisions of the second, third, and fourth cervical nerves on the right side. In this case the spasms were much more severe in the splenius capitis than in the sterno-mastoid, and therefore I operated for the former muscle in the first place. Four days later the wound had healed up, and I removed the stitches. On the tenth day the patient was able to sit up in bed, and the spasms had entirely ceased both in the splenius and in the sterno-mastoid. Whether there will be any return in the latter muscle remains to be seen, but so far the result is perfectly satisfactory. Of course, it may be necessary to operate on the spinal accessory; but to-day (May 1st), fourteen days after operation, the patient feels perfectly well, and, after sitting up in bed some minutes, the sterno-mastoid, as well as the splenius, remained perfectly tranquil. Previous to operation, the spasms were always present, except when the patient was absolutely at rest, and they had existed for over a year. The latter patient was sent to me by Dr. Aveling, of Stamford Hill.

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XX.

GENTLEMEN,—There are many insidious ways in which lead poisoning may take place. File-makers are said to be liable to lead poisoning from striking incessantly upon lead cushions. Tea may be contaminated by so-called tinfoil, which is mainly lead. I knew an instance of a country practitioner who was confronted in his district with several cases of chronic lead poisoning, and he could not make out for a long time what was the cause. At last he thought he detected the cause in certain packets of tea, and on analysing this tea, or getting it analysed, a very minute quantity of lead was found. This practitioner wrote to the local papers, and he also wrote to the ' Lancet.' Whereupon the tea-dealers threatened him with an action, and he had to pay handsomely. That must be a warning to you to be sure of your ground before you take any public action of that kind. The proper course would have been, I think, either to have communicated with the sanitary authorities confidentially, or have written confidentially to the tea dealers, stating his suspicions, and asking them to direct attention to the matter. But, when, on the analysis of a packet or two, he wrote condemning the whole of the tea sold by a big company, of course, he put himself wrong. It was very public-spirited of him, but you must be very cautious how you take steps of that kind. Now, just a word as to how water becomes contaminated with lead. I think the best thing to say is that our knowledge is incomplete. It is certain some waters are but little affected by lead; and it is certain that other waters are very easily affected by lead. Taking the matter broadly, we should say that hard waters, waters which contain a great deal of dissolved matter, especially lime, and especially carbonates and sulphates, do not act upon lead, but that soft waters do act upon lead. But there is something more than that. In Glasgow they have a most exquisite soft water from Loch Katrine. I believe the amount of dissolved matter in the Glasgow water is smaller than in any other town in the

three countries; and I fancy I am right in saying that lead poisoning in Glasgow has been exceedingly rare, and that I am also right in saying that they are very careful in Glasgow about their lead fittings. But, of course, in a huge city like that, care is not universal. Still, the Loch Katrine water does not seem to act injuriously upon lead. On the other hand, some of the waters obtained by the Yorkshire towns, particularly from off the moors, do act very actively upon lead, and the cause of that is said to be the acid in the water, the acids being found in the peaty soils, which serve as gathering ground for the water. It is now recognised, therefore, that these peaty waters are dangerous to lead. Still, one would imagine that the gathering ground for the water of Loch Katrine must likewise be peaty; and I think the difference must be found in the fact that, somehow or other, in the huge settling reservoir, which Loch Katrine is, a change takes place which makes the water safe.

One of the most notable instances of lead poisoning in this country, and one which caused a great deal of excitement, was the poisoning of the French Royal family, who were then staying at Claremont; the water at Claremont in those days was got from sandy soil, and was soft. The whole household suffered from lead poisoning because the water acted upon the lead fittings. It is probable also that impure waters act upon lead. In the old " Bills of Mortality " for London, which were collected by the parish clerks in the sixteenth and seventeenth centuries, the causes of death are very odd, we do not quite know what some of them mean. For instance, a considerable number of people in old London were " planet struck," but they do not say what it means, or what planet it was that struck them. You will notice that a very common cause of death in these records was " griping in the guts," which, in those days, was a sufficient cause of death to put in a death certificate. " Griping in the guts " is common from a variety of causes, but one cannot but suspect that the old water conduits, which were of lead, were answerable to no small extent.

Lead has been used in medicine very largely as an antiseptic and as a stypic, it has been given for internal hæmorrhages, and it has been applied externally in various forms as a lotion. I think there can be no doubt that lead produces a con-

traction of the muscular coat of the small vessels and arterioles. When a person takes small quantities of lead, one of the first things he suffers from is pallor of countenance, and there is nothing more remarkable in the effects produced than the anæmia. The patients have a muddy, sallow complexion, which is sometimes called saturnine, and this yellowish complexion is especially marked in a patient whom I have now under my care in Ward 8. The next thing from which a patient suffers who is taking lead is constipation, and the constipation is due to the contraction of the muscular coat of the bowels. It is said that that contraction may be so marked in some of these cases as practically to obliterate the lumen of the bowel altogether. When a patient has lead colic, the abdomen is retracted because the bowels are all contracted, and therefore occupy a smaller space than normally is the case, and it is this boat-shaped hollow abdomen that often helps you in the diagnosis of lead colic, or painters' colic, as it is very often called. Thus you get constipation, pallor, and diminution of the red blood corpuscles; later, with the contraction of the arterioles, there is a degeneration in many organs, and workers in lead eventually get, almost to a certainty, some fibrosis of the kidney, which latter is one of the commonest things in lead poisoning, and, of course, it checks elimination. Now, with contraction of the arterioles, and with obstinate constipation and contraction of the intestines, and chronic fibrosis setting in in the kidney, it is obvious that one of the reasons why lead poisoning is so excessively insidious, is that the channels of elimination are blocked, and it is just precisely because you take into your system a poison which sets to work to block the channels of elimination, that the effect of the lead is markedly cumulative. A person suffering from lead poisoning has generally a low temperature and a slow pulse, and very commonly he has a blue line on the gums. This blue line is well marked in the patient now under my care, whom I have mentioned. The blue line upon the gums requires a little attention. It is a thin line of blackish blue close to the margin of the gums. It naturally occurs where the teeth are present; where the teeth are gone you get no blue line, even though the person be saturated with lead. The blue line is said to be caused by a precipitation of lead sulphide in the tissues at the

margin of the gum, and the lead sulphide is said to be formed by the hydrogen sulphide, which is brewed by the decomposition of the albuminous food collected round the edges of dirty teeth. I mention this because, supposing you get a person whose teeth are very carefully kept, and in good order—a rare condition—you find there is no blue line. It is very important to recollect that you may have lead poisoning and no blue line.

I mentioned that lead checks elimination, and that leads me to speak of another symptom which is common in lead poisoning. A sufferer from chronic lead poisoning is very frequently a sufferer from gout, and it was pointed out in our hospital over the way by Sir Alfred Garrod, that if to gouty patients you administer a very small quantity of lead acetate, a gouty paroxysm almost inevitably results, and gout, I take it, is, broadly speaking, due to the fact that a person's dietitic and metabolic accounts do not balance, that is, that the intake is rather greater than the output. If you have a man with good health, good appetite, and healthy gastric juice, good villi to absorb the food, and a healthy liver to deal with it, and, if you suddenly check the elimination, that man runs a great risk of a gouty paroxysm. In discussing gout, too much is made of uric acid, which, I believe, is only an accidental circumstance, valuable as showing you what is happening; but you must not pay too much attention to it, because I believe the amount of notice it receives is most unscientific. The gout are divisible in two classes: (1) the class who become gouty because they have got very powerful primary digestion, with a perennial appetite and perennial thirst, and (2) the man who becomes gouty not so much because he can absorb this or the other, but because he cannot eliminate. The late Sir Andrew Clarke used the expression, and a good practical expression it was, that there was a large number of people who suffered from "renal inadequacy"; that is to say, they were perfectly happy, so long as they did not exceed at table either eating or drinking, but directly they took liberties, and tried to do what others did, they got gouty symptoms, because there was renal inadequacy. And you will find people with no other sign of disease, except that they pass urine of rather low specific gravity, and probably a certain number of these may have granular kidney forming. But the point I wish to

emphasise is that the gouty have to be divided into two classes.

Now, the plumbic gouty person, the saturnine gouty person, is generally of the latter class. He becomes gouty because he fails to eliminate, not because he sometimes absorbs too much. The reason why the administration of acetate of lead brings on a paroxysm in a gouty person, is that it instantly checks elimination. Take a gouty man, who is a stout, rubicund, jolly person, and suddenly check the action of his kidneys, and let his habitually freely-acting bowels become constipated. His perennial smile disappears, the angles of his mouth are drawn down, he feels miserable; perhaps he beats his wife, and then his big toe swells in the middle of the night. You have to remember that the overloading of the organism with the products of nitrogenous metabolism has a very powerful effect upon the nervous system. I think we can now come back to lead poisoning, a little bit better able to understand some of the troubles. One of the common troubles mentioned in books as occurring in chronic lead poisoning is *arthralgia*—pain in the joints, and these pains in the joints are probably resolvable into gouty pains, and pains due to nerve disturbance, to neuritis, and, possibly, to changes in the central nervous system and in the spinal cord, which not infrequently suffers from sclerosis. Now, just as you get fibrosis of the kidney, so in chronic lead poisoning you get fibrosis of the other tissues— fibrosis affecting the spinal cord, the liver, and other organs and tissues of the body. One of the other symptoms of lead poisoning is paralysis, and in its typical form this paralysis is known as " wrist-drop." For instance, a painter suffering from lead poisoning cannot use his brush, and it is due mainly to paralysis of the muscles supplied by the posterior interosseous nerve, that is to say, the extensors of the wrist and fingers. As a rule, the supinator longus escapes. In a person who has suffered for some time from wrist-drop, the muscles rapidly degenerate, and give the reactions of degeneration. But I would warn you that a person suffering from chronic lead poisoning may be almost entirely paralysed, that is to say, he may be absolutely paretic everywhere, and there may not be a muscle in his body that acts properly. After the wrists, the most common muscles to be affected are the deltoids. Last

year I had a man under my care who had not a sound muscle in his body, and some were very much wasted. He had also a singular lack of expression, not from absolute paralysis of facial muscles, but from a paretic condition, and his voice was very imperfect and toneless, because he had paralysis, or want of adducting power, in his vocal organs. In certain forms of lead poisoning there are head symptoms and insensibility called *encephalopathy*. I do not know whether that word is of much use to you, but coma and convulsions do occur, and the question is whether this coma and convulsions are secondary to a granular contracted kidney, or due to primary intoxication by the lead itself. In some lead factories, especially in the north, and especially with women, the action of the lead-laden atmosphere is what one might call fulminant, and the patients are taken and convulsions are secondary to a grandular convulsed, and very often die rapidly. In this part of the country we are unacquainted with lead poisoning of that kind, but I quote Dr. Thomas Oliver, whose services in the investigation of industrial diseases we must all gratefully acknowledge. Another trouble not very common is amaurosis; that is generally due to retinal degeneration and optic neuritis. Now, there is one peculiarity about lead poisoning, and it is this: that true gout is much more common among lead-workers in the south than in the north; and while gout is common amongst plumbers and lead-workers in England, it was said to be practically unknown in Scotland—Edinburgh and Glasgow—and the reason given used to be that whereas the English plumber soaked himself in beer, the Scottish plumber soaked himself in whisky; and it was said the whisky drinker, for some reason or other, escaped the gout. Whatever the explanation may be, that explanation which I have just mentioned is apparently not true, and Dr. Thomas Oliver points out that the Newcastle worker and the workers in lead on the Tyneside are by no means deficient in their attention to the national beverage, beer, but they do not get gout. And I think Oliver is of opinion, an opinion which seems reasonable, that the size of the towns has something to do with it. There is no doubt whatever that whether you get gout or not very much depends upon how you are circumstanced. A man who lives in the fresh air, and

who is engaged in active exercises, and can hunt, and so on, runs very much less risk of gout than a person who is cooped up in the centre of a very big city, to get to the outskirts of which involves a journey, the expense of which is, perhaps, too great for an artisan. The occurence of gout in London, and its comparative non-occurrence in other places, may be due to that fact. However, the fact remains that gout is much more common in the south than in the north. A worker in lead gets granular contracted kidney, and, of course, high arterial tension and hypertrophy of the heart. Now, the point I should like to ask you, or which you would ask me, is, "What quantity of lead is necessary to give a man chronic lead poisoning?" I should answer that question in this way: That if the lead be detectable, in however small a quantity, in anything which the man is taking habitually, such as water, he certainly runs a risk of getting chronic lead poisoning; and if you were to say in any case that the amount is so small that it may be neglected, I feel sure you would be giving wrong advice. However small the quantity of lead detected, you ought not to allow the person to go on taking it.

Next, as to the treatment of lead poisoning. Of course, in acute cases, you give emetics, purgatives, and albuminous fluids. Now, as to chronic lead poisoning. The most important thing, much more important than treatment, is the prevention of lead poisoning, by preventing the person taking any lead into his stomach or into his lungs. In order to prevent lead poisoning, two things are necessary: thorough ventilation of the factory, and absolute cleanliness on the part of the worker. It was said that lead poisoning was much more common in London than in smaller towns, especially the Scotch towns, and one of the explanations originally offered was that the Scotch artisan, the town in which he worked being comparatively small, went home to his dinner, and ate it in civilised fashion, that is to say, after he had washed his hands, and so forth, while the London artisan, being at a distance from his home, was obliged to take his dinner very often with dirty hands, and, under these circumstances, the dinner is generally eaten in the·fingers. One need hardly say that a man engaged in lead ought to be exceedingly careful about personal cleanliness. He ought always to wear a complete suit of washable

overalls, and, of course, he ought to wash every part of his body daily, including the head and hair and whiskers. That, I think, is not an unimportant matter. If a man is working in a dusty atmosphere, should he or should he not wear a moustache? Now, a moustache is a natural respirator, and tends to stop the inhalation of lead particles. On the other hand, it is likely that particles get caught in the moustache, and if he sucks the end of it, as so many do, he may constantly be taking lead into his system in that way. I should be inclined to say that a lead-worker should be clean-shaved. These points are not by any means trifling, but are of great importance to the artisan. If a man inhabits a dirty suit of clothes until they drop off him, as some do, I think he has nobody but himself to thank if gets lead poisoning. Another point is that if a man is working in lead (and in this I quite agree with Dr. Oliver), he should be a teetotaler; absolute abstention from alcoholic drinks is, for a lead-worker, most desirable. If a man is in the habit of drinking beer, and overtaxing his kidneys, he is very likely to get fibrosis of the kidney, and to suffer from lead poisoning severely. In places where lead is manufactured, if you can use wet methods of manufacture instead of dry, dusty, and powdery ones, of course the prevention of lead poisoning is thereby favoured. The theory has been put forward that workers in lead should quench their thirst with acid drink into which sulphuric acid enters. Well, I do not at all agree with that. It is said that sulphate of lead is insoluble; so it is, *in water*, but things which are insoluble in water are perfectly soluble in the alimentary tract; and it is said that lead poisoning has occurred amongst seamstresses from sucking the end of cotton which has been loaded with lead sulphate, lead sulphate being one of the things with which cotton is adulterated to give it weight. But sulphuric acid is a very constipating substance, and to give people drinks containing it seems to me a risky mode of treatment. But it is not of much use discussing the question, because I am told that where this sulphuric acid lemonade has been provided, the people will not drink it. To treat cases of lead poisoning, we must find out the source of the lead, and cut that off. Lead poisoning has been treated from all time by hot baths, notably at the thermal springs at Bath, and by

sulphur baths, especially sulphur baths in high situations, such as in the Pyrenees. This locality has a great reputation for the treatment of cases of lead paralysis. I need not go into the other question of treatment of the muscles by massage, and so forth.

Next, as to the detection of lead. Now, acetate of lead is one of those things which you may have to detect, and you may have it given to you in the form of a white powder, and perhaps mixed with such a thing as flour. I want to give you just one word of caution here as to dealing with bodies which are given you mixed with starchy materials. I have here some wheat flour, and I will add to it some acetate of lead. Probably you know what it is by the smell, as most starchy things have a slight smell. We proceed in the ordinary way by putting some on platinum foil. In the powder which I have here you can see a few little shiny particles. It does not melt, and, of course, it chars, from which fact I simply know that I have some organic matter. Now, I will take some of the pure acetate of lead, and you see it melts and inflames, and leaves a yellow lead oxide upon the foil. The next point I want to direct your attention to is this. When you have a powder like this to examine, you must be careful, first of all, to extract it with a little *cold* water; do not make the fatal error of boiling it, because, if you do, you cannot filter it, and you are thwarted. I have known men take hold of a powder of this kind and boil it. Acetate of lead is very soluble, and I shall be able to get it out from the starch rapidly. I have now got my clear solution, and the first thing I will add is hydrochloric acid. With that I get a white precipitate; I add more hydrochloric acid, and it does not dissolve, so that this powder, which contains carbon, is not tartar emetic. You will remember how the antimony salt behaved—on the addition of excess of hydrochloric acid we got it dissolved. We will now add some more water, and boil over the spirit lamp; you see the precipitate caused by the hydrochloric acid is redissolved in a large quantity of hot water. Now, I want a confirmatory test, and I therefore put a little into three test-tubes; add sulpheretted hydrogen in liberal quantity, and I get a brown coloration. Ammonium sulphide gives me a black precipitate instantly, and potassium iodide a yellow precipitate.

ECZEMA.

Dr. Colcott Fox, in 'The Medical Annual' for 1899, writes on this subject as follows:—We will note one or two special points in the treatment where fermentative dyspepsia exists. Leredde advocates Albert Robin's treatment by administering after each meal fluoride of ammonium (see "Treatment of Dyspepsia" in 'Traité de Therapeutique appliquée'), and in the case of butyric fermentation the following cachet *with* each meal:

℞ Erythyrol (double iod. of
   bism. and cinchonidine) 0·10 grms.
   Calcined magnesia...   ...   0·20 „

Alkalies find their place in the period of regression of non-dyspeptic cases after the administration of diuretics and purgatives. Brocq prescribes a mixture of benzoaté of sodium, bicarbonate of sodium with some bitters. In relapsing eczema of the gouty the carbonate, benzoate, and salicylate of lithia are useful. For instance, a mixture of bicarbonate of soda and carbonate and salicylate of lithia in water charged with carbonic acid.

Infantile eczema, characterised by its frequent origin in early infancy, its symmetry, and descending progress from the scalp, is one of the most clearly defined types, and year by year excellent papers appear setting forth the lines on which it should be treated. Pusey says the subjects of it are apparently in vigorous health, but minute investigation discloses in the vast majority either (1) disturbances of digestion, usually traceable to improper feeding at the breast or by hand; or (2) unsuitable breast milk; or (3) failure of balance between assimilation and excretion, usually from over-feeding. These errors bring about an accumulation in the blood of toxic products (toxæmia). No proof of these statements are, however, forthcoming. Local cause of irritation cannot be overlooked, such as soaps, water, scratching, &c., acting on an inherently sensitive skin, and Professor J. C. White has insisted on the changed conditions in passing from a subaqueous intra-uterine existence into an atmospheric envelope. So also a reflex nervous influence radiating from the digestive tract, or troubles of dentition, or adherent prepuce may come into play, though, perhaps, only as an aggravating factor.

With regard to *treatment*, Pusey says there are no specifics, and arsenic is not called for as a rule. The indications are: (1) To correct the causes of toxæmia pointed out above by suitable regulation of the diet, and by medicinal action on the digestive tract; (2) to protect diseased surfaces from the local sources of irritation mentioned. For the latter purpose bathing should be carried out with water boiled with bran, or rice, or gelatin, to which a little bicarbonate of soda may be added. Healthy parts should be thereafter dusted with a bland powder, such as boricated talc, or stearate of zinc. *Prevention of scratching* is to be achieved by constant watchfulness, or muffling of the hands, by covering diseased surfaces with a mask or cap on which salves may be spread, or by adopting White's plan of elaborately pinning up the arms and legs in a pillow case, which allows the head to come through. (In our opinion splints are much the most effective means for keeping the infant from rubbing and scratching.—T. C. F.) *Cleansing of pus and crusts* can be effected by prolonged saturation in sweet almond oil or olive oil, or boricated vaseline, or maceration with boric acid wet dressings. *Local medicinal treatment* for weeping surfaces should consist of equal parts of black wash and lime water with ʒij—iv of mucilage of tragacanth to the pint; or Liq. Plumbi Subacet., ♏vj—xviij; glycerin, ix—xviij to Aq. destill. Oj. When less weeping, Lot. Calaminæ is useful. After dabbing on these lotions a salve should be also applied spread on the mask, such as Lassar's paste, or zinc ointment, or well-made fresh diachylon ointment, a mixture of lanolin and vaseline, to which salicylic acid (gr. v to the ʒj), or resorcin, or carbolic acid, or ichthyol can be added if desired. As the condition improves, stimulation can be effected by increasing the strength of the medicaments, and smearing them on. Tar is the best pronounced stimulant. W. M. Nelson has an excellent paper on the 'Local Treatment of Eczema.' He also advises avoidance of soap and water, or even water. If the latter is used at all it should be hot, and thoroughly and quickly dried off, and the selected dressing applied. But a thin strained decoction of oatmeal, bran, barley, or rice milk, or thin hot starch, boricated (ʒj to Oj), is better. Cotton-seed oil cleanses well. *Removal of crusts and scales.*—Saturation with oil sopped on or soaked into lint or canton-flannel, the whole covered with a cap. Properly made boricated starch poultices are useful for non-hairy parts. Gruel or decoction of marshmallow, to either of which sodium bicarbonate (ʒj to Oj) has been added, is serviceable.

The above interesting extract from the 'Medical Annual and Practitioners' Index' for 1899, published by Wright of Bristol, gives a fair idea of the excellent manner in which this valuable work of reference for medical practitioners has been thoroughly well brought abreast of the times. The volume is illustrated by twenty-five coloured plates and one hundred and thirty-four wood engravings. From a medical man's point of view the Annual's utility is enhanced by the copious index to the contents. The publication is a well-balanced *résumé* of the practical medicine, surgery, and midwifery of the present day.

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NOTICE.

A CLINICAL LECTURE

ON THE

GENERAL DIAGNOSIS OF INTES-
TINAL OBSTRUCTION.

Delivered at the Westminster Hospital,

By CHARLES STONHAM, F.R.C.S.,

Surgeon to, Lecturer on Surgery and Teacher of Operative
Surgery at, the Hospital.

GENTLEMEN,—To-day I propose to run over with
you the diagnostic features of intestinal obstruc-
tion. The importance of the subject is great,
more especially when one reflects what a common
thing it is to find cases sent into the hospital—
and I believe it is the experience of London sur-
geons generally—of undoubted intestinal obstruc-
tion which have been treated under a mistaken
diagnosis (and, consequently, wrongly treated) for
some days, until, in fact, the patient has lost that
chance of life which a surgical operation might have
given him. Some of you will remember that last
year I had three or four cases, one after the other,
in which the patients had had acute intestinal
obstruction for periods varying from five to seven
days, and, under such circumstances, I need hardly
say that even if you perform an operation, the
probability is that the patient will succumb, and
in very many such cases operation is absolutely
out of question in view of the state of the
patient.

The diagnosis of obstruction has to be made
from three points of view. First of all you have
to ascertain the fact of obstruction; secondly,
you try to locate its seat; and, thirdly, you make
the diagnosis as to the pathological cause of the
obstruction. The recognition of the fact of ob-
struction is the most important. There are cases,
and they are not by any means uncommon, in
which, although you may make a diagnosis as to
the seat and pathological cause of the con-
dition present, yet, when performing a celio-
tomy, you find you are wrong. So long

as you make quite sure beforehand of the face of obstruction, you are not likely to maltreat your patient, in fact, you ought (in acute cases, at least) to lay open the abdomen straight away to seek for the cause, and put it right if you can, provided non-operative measures cannot be adopted.

To-day, I propose to consider the diagnosis of the fact of obstruction, and briefly to refer to that of its seat. The leading symptoms indicative of acute intestinal obstruction are the suddenness of onset, usually with collapse or shock of more or less intensity, the circumstances influencing which I will tell you of presently. Then, there is pain of a characteristic, or almost characteristic, nature, nausea and vomiting; the vomit usually becomes stercoraceous, but not always so; there is also constipation, which, however, is not always abso-lute; sooner or later tympanitis becomes marked, and very likely symptoms of local peritonitis set in. Such are the leading features of the con-dition.

With regard to the onset. In most of the cases of obstruction there is a definite acute history; the patient will very probably tell you that on such and such a day he was perfectly well until suddenly seized with pain in his belly, with vomit-ing, and all the leading features which I have mentioned. But, at the same time, if you carefully inquire into the patient's history, you may find that he has been suffering from symptoms referable to his intestinal tract for months. The fact is, in-testinal obstruction may present itself under three clinical phases. There may be an absolutely acute obstruction that has not been preceded by any pathological condition before; such, for example, as acute intussusception. Or you may have an acute obstruction coming on the top of a chronic obstruction, as in the case of a stricture of the intestine, the lumen of which suddenly becomes occluded by a plug of fæces, or indigestible ma-terial. In this case, of course, there will be a history, although perhaps indefinite, extending back over some months. The third class of cases are those in which the patient comes to you com-plaining of symptoms of chronic obstruction, but not of the acute symptoms which I propose to draw your attention specially to to-day.

Collapse.—There is nothing special in the col-lapse of intestinal obstruction, except its remark-

ably rapid onset and its severity. The degree of shock varies according to circumstances, and is, to some extent, proportional to the pain; it is much worse in some people than it is in others, just as some suffer greater pain than others from the same cause. Then it depends also to a very large extent upon the amount of bowel that is involved in the obstruction; the greater this is the greater the shock, and, generally speak-ing, the shock is greater if the obstruction be in the small intestine than if it is in the colon. The reason of this is probably to be found in the fact that the small gut is a part having more vital activity than the great intestine; for the small in-testine has to do a considerable amount of secre-tion and absorption, whereas the colon is practi-cally an excretory duct, and it is a common clini-cal observation that the degree of shock is directly proportional to the vital importance of the organ or tissue which is affected.

Now, the shock is not due to the fact of ob-struction; the mere fact that the passage of fæces through the intestinal canal is stopped will not produce it. It is rather due to the amount of ab-solute damage which is inflicted on the peritoneum, and also on the nerves supply-ing the intestinal wall. You know that shock is generally regarded as a condition affecting the splanchnic area, producing extreme vasomotor dilatation of the vesels in it, which become engorged with blood; in the case of intestinal obstruction, this is produced reflexly by the damage inflicted on the peritoneal wall. This is, moreover, another reason why the shock is greater in damage of the small intestine, because, as you know, the great intestine is only partly covered by peritoneum, and is less plentifully sup-plied with nervous filaments.

Pain.—The pain of acute intestinal obstruction is of a colicky nature, and usually comes on with the onset; occasionally it is only slight at first, be-coming severer as the obstruction becomes more marked. Pain is due partly to the actual damage inflicted on the nerves of the intestine and partly to ineffectual and very strong peristaltic action. The latter is especially true in cases of chronic intestinal obstruction. The pain which is de-pendent upon damage to the nerves is constant, whereas that due to strong peristaltic action is intermittent. Therefore you will very likely find

that the patient complains of a continuous feeling of pain, perhaps hardly more than uneasiness, but with paroxysms of considerable severity. If you watch the patient's belly during a paroxysm you may, when it comes on, be able to see the coils of hypertrophied gut moving about beneath the abdominal wall, and you will also probably hear gurglings in his intestine. If you put your hand upon the abdomen you may be able to feel the strong peristaltic movements. The pain is almost invariably felt round the umbilicus, that is to say, it is referred to the solar plexus, which you know lies just above and to the right of this point. But the situation of the pain in acute intestinal obstruction is never to be taken clinically as a guide to the seat of the obstruction. Because a patient says, " I have pain in the epigastric region," it does not show that the obstruction is in that region, although it is true that the situation may sometimes put you on the right scent, and give you a hint as to the nature of the obstruction, *e. g.* intussusception. Because a patient says he has pain, say, in the left groin, it would be bad surgery, in default of an accurate diagnosis, to cut down upon that side, instead of opening the abdomen in the middle line. Although it is generally true that the seat of pain is not indicative of the seat of obstruction, you will find that occasionally it will help you in obstruction of the great intestine. Pain due to causes in the colon is much more likely to be localised by the patient than when due to causes in the small intestine, the reason probably being that the colon is a more fixed anatomical structure than the small intestine.

The degree of pain depends a good deal upon the same circumstances as does the degree of shock, *i. e.* the amount of bowel involved, the tightness of the constricting band, and the nervous temperament of the patient. If you find that the pain is distinctly intermittent, it points strongly to the fact that the obstruction is only partial, but if this becomes complete the pain will be constant; thus you may find that the patient, in giving the history of his case, will tell you that he had pain, and that it came on in paroxysms, but in the last few hours the pain has become absolutely constant. Intermittent attacks of pain, or exacerbations, may be produced by swallowing, by an examination of the abdomen or rectum, or by the use of enemata. Probably you will find later

on that the pain becomes more diffuse, and not only so, but is associated with a certain amount of superficial tenderness, tending to show that acute peritonitis is being set up in the neighbourhood, and extending from the seat of primary obstruction. Again, you may find that, as time goes on, instead of the pain increasing it diminishes. Pain may diminish either because the obstruction is being overcome by the unaided efforts of nature, or because the collapse is deepening before death, or it may be that the bowel has yielded above the point of obstruction. If it be due to such yielding of the bowel, the pain, notwithstanding its temporary subsidence, becomes very acute subsequently, when the foul material escaping into the peritoneal cavity sets up a diffuse acute peritonitis.

Nausea and vomiting.—Nausea is a constant and, sometimes, very distressing symptom of intestinal obstruction ; it is not relieved by vomiting. Vomiting is invariable ; it may occur at an early or later stage of the obstruction, the time of its appearance being dependent in a large measure upon the seat of the obstruction. If the obstruction is in the small gut, especially high up, vomiting will come on quite early ; whereas if it be low down in the great intestine, vomiting may be long delayed.

Another point in reference to the vomit is its nature. At first the vomit consists of the contents of the stomach, then the upper bowel is evacuated, and later the vomit becomes fæculent. Fæculent vomiting is diagnostic of intestinal obstruction. But remember that you may have intestinal obstruction, and no fæculent vomiting; indeed, the vomiting cannot be fæculent if the obstruction is high up, and it may not be so if the obstruction is low down in the colon, because the fæcal matter may be prevented from coming up by the ileo cæcal valve, though it is well to bear in mind that the ileo cæcal valve is not a perfect safeguard—its action as a valve being imperfect.

With regard to the causation of fæculent vomiting, it used to be taught that it is dependent upon inverted peristaltic action, but this is now held to be incorrect, and it is known to be due to a backward central current. The peristaltic contraction of the bowel drives the fluid down to the obstruction, from which point a ricochet current comes back up the centre. The vomiting that at first occurs is reflex, and is probably dependent upon

the mere fact of injury to the peritoneum covering the intestinal wall, and is analogous with the vomiting that so frequently ensues when a testicle is crushed, or some other severe injury is sustained.

Constipation.—Constipation is due to the fact of mechanical obstruction; but in some cases it appears that constipation is not solely due to this, as is shown by the fact that the bowel *below* the obstruction may not empty itself; therefore there must be some added cause, such as is to be found in the fact of the injury to the intestine, giving rise to a definite traumatic paralysis of the intestinal walls. One knows that a similar condition may occur after an operation for strangulated hernia; the bowel, from which all obstruction has been removed, is replaced in the abdomen, and yet the obstructive signs continue, the gut being unable to recover its function after injury.

Occasionally you find that constipation has been preceded by diarrhœa, or by constipation alternating with diarrhœa; this is especially likely to be so in cases of acute, supervening upon chronic obstruction. The cause of the diarrhœa under such circumstances is an enteritis, which is set up by the irritation of the scybalous masses in the intestine, giving rise to a profuse flow of mucus and a little watery fæces. The fact is, that as retention and so-called incontinence of urine implies that the bladder is too full, so very often diarrhœa implies that the patient is constipated, and this is especially so in cases of chronic intestinal obstruction.

Again, the patient may tell you that he has had an action, or perhaps two actions, of the bowels after the first signs of intestinal obstruction manifested themselves; this merely means that the bowel below the seat of obstruction has emptied itself, but when that has been done the constipation will remain absolute, provided the obstruction be complete. Sometimes, after a few days, the patient begins to pass small motions, with, perhaps, scybalous masses, and this is to a certain extent evidence that the obstruction is being overcome by nature, and, of course, is of favourable augury.

Another symptom is diminution in the quantity of urine, dependent upon an alteration in the vascular supply to the abdominal organs, due to reflex paralysis through the solar plexus. It used to be taught that the diminution of urine was directly proportional to the height of the obstruction—the higher the obstruction the less the urine, but this is now known to be untrue. The fact is, that the higher up the obstruction the greater is the shock to the nervous system, and very often the greater is the amount of bowel affected, and hence the more profound effect made upon the nervous system. You will find, moreover, that the more acute the injury, as regards its onset, the less urine will be passed; given a case of chronic obstruction, there may be little or no alteration in the quantity of urine; but in the acute form there will always be some diminution. An additional cause, although, perhaps, a subsidiary one, which should be mentioned as affecting the secretion of urine, is that the patient has vomited profusely, and hence there is a large withdrawal of water from the system. Another reason for a diminution in the quantity of urine is that the patient is taking practically nothing to drink. The loss of fluid by repeated and profuse vomiting, coupled with the shock and the general nervous condition, is the cause of the extreme thirst from which these patients suffer.

In addition to these general symptoms, there are certain local conditions which may help in the diagnosis, and the first of these to be mentioned is the presence or absence of hernia. Having got out your history and the leading symptoms of the case, the next thing you should do is to examine the abdomen in all the common and uncommon seats of hernia. It will not do simply to examine the inguinal and crural canals; you ought to examine for a lumbar hernia, or an obturator hernia. Finding none, you should then, of course, proceed to examine the abdomen systematically, and the rectum also. Supposing you find a hernia, your next step is to ascertain whether that hernia is tense and tender, and whether it is reducible or not. There may be a very small hernia in the crural canal in a fat woman, which may only be detected with the greatest difficulty, and yet it may be the seat of strangulation. The general rule is, giving a hernia which is irreducible, and given symptoms of intestinal obstruction, cut down on the hernia before you open the belly. You will very likely find that it is in the hernia where the trouble is. In examining the abdomen,

you should do so in the way I indicated to you last week, when we were discussing abdominal tumours. You will notice, perhaps, in the early stage of acute obstruction, that the abdomen has not altered in shape, or you may find that it is more or less distended by tympanites. The occurrence of meteorism is common to all forms of intestinal obstruction sooner or later, and meteorism is sometimes, to a certain extent, indicative of the situation of the obstruction. For example, if you have distension of the belly in the middle line, that is to say, in the hypogastric, epigastric, or umbilical regions, it points rather to obstruction in the small intestine than to obstruction in the colon. If the meteorism is little marked, and comes on late, it points to obstruction in the small intestine high up; if it is causing bulging of the lumbar and iliac regions and the flank, and if it be extreme, producing, perhaps, dyspnoea, and very great general distress, the probability is that the obstruction is in the colon. But, wherever it originates, the meteorism tends to become general; it is only a valuable symptom as regards the position of the obstruction in the early stages of the condition.

By inspection of the abdomen you may see the peristaltic action of the intestines; but this can only be observed in thin patients, and you will be more likely to see it in cases of chronic obstruction, the reason being that in chronic obstruction the wall above the seat of obstruction has undergone hypertrophy, and hence the muscular movements are more pronounced. Visible peristalsis is especially noticeable during a paroxysm of pain.

As regards palpation, you may or you may not be able to feel a definite tumour, depending upon its size and position, the degree of abdominal distension, and the fatness of the patient.

Diagnosis of the seat of obstruction.—Generally speaking, we divide cases of intestinal obstruction, as regards their seat, into those situated in the colon, and those which affect the small intestine. It is impossible in very many instances to say in the latter class of cases whether the obstruction is low down or high up; but it may be generally stated that the higher up the obstruction in the small intestine, the more early the vomiting, the more constant the pain, the more extreme the distress of the patient, the

greater the collapse, and the more speedily fatal the case is likely to be. I may add that the higher up, the less likelihood is there that the patient will develop faecal vomiting. On the other hand, when you get obstruction low down in the colon, the vomiting may be postponed, but it will eventually certainly become faeculent.

You find that all the symptoms of obstruction (meteorism excepted) are far more marked and grave when the condition is in the small intestine than when it is in the colon. I mentioned to you just now that the large intestine plays a far more passive part in the economy than does the small intestine, its office being chiefly to get rid of the solid faeces, acting more as, if I may use the expression, a main drain. On the other hand, the small intestine, although it has also a certain amount of drainage function to perform, has a considerable vitality and physiological importance as regards absorption, and this being the case, it is not surprising to find that the nervous supply of the small intestine is greater and more important than is the nervous supply of the great intestine, and hence damage of it is more likely to be followed by graver symptoms.

Pain is not a very valuable guide in locating obstruction. It is generally less severe, less constant, and more likely to be intermittent when the obstruction is in the great intestine than when it is in the small. One reason of its being more likely to be intermittent is that chronic obstructions are more commonly situated in the colon than in the small intestine. Chronic obstruction are frequently incomplete, and, as I said before, the pain of an incomplete obstruction is not necessarily constant.

If the obstruction be in the colon, vomiting occurs much less early, is very much less severe and less profuse, and it is a much longer time before the vomit becomes stercoraceous than it is if the obstruction be in the lower part of the ileum. You find, moreover, that sometimes, in cases of obstruction in the colon, the vomiting, like the pain, is distinctly intermittent. In cases of chronic obstruction, vomiting and pain may subside for hours together; the patient feels very much better in consequence, and his friends begin to take hope, but the paroxysms again return, and the condition is more serious than before.

In very many cases where there are symptoms which point strongly to the colon, you may find

that, when you open the abdomen, it will be the small intestine which is affected. Conversely, you will sometimes find that when the symptoms, owing to their severity, rapid onset, &c., point to the small intestine as the seat of obstruction, it will actually be found to be in the great intestine. You must not, therefore, rely too implicitly on the symptoms as indicating the position of an obstruction, but must bear in mind that the determination of the position of the obstruction is easy in some cases, and difficult in others.

It is suggested, and, no doubt, in some cases, the suggestion may prove useful, that if large enemata of water are thrown into the rectum, it can be heard passing right round the colon to the cæcum, and then gurgling past the valve. At the same time there are several sources of fallacy. You may mistake the ordinary borborygmi produced as a result of obstruction, for the water trickling through the ileo-cæcal valve, or the water passing from the enema syringe into the rectum, may be mistaken for the fluid going back to the cæcum. Again, the enema makes a rumbling noise, heard practically all over the abdomen, and it is often difficult to locate a sound definitely to the cæcum.

With regard to attempting diagnosis of obstruction in the colon by the passage of a long tube, my judgment is that nothing could be worse. The fallacies in regard to it are by no means imaginary. By passing a long tube you may think you have found a stricture when none is present, because the tube has doubled back on itself, or, if it be small, it may pass through a stricture. Moreover, it is a dangerous procedure, for the tube may be pushed through the gut, and thus terminate the case fatally. I believe the use of the long tube should be a thing of the past, and I do not think surgeons should even possess one.

TABLOIDS of artificial effervescent mineral water salts are now supplied by Messrs. Burroughs, Wellcome and Co. They form pleasant effervescent draughts, one in a given quantity of water being equal in strength to the same volume of Carlsbad, Kissingen, Vichy, or natural seltzer water. They are far more compact than ordinary salts or bottled waters, and render possible a continuous course of mineral water treatment in all lands, and under all circumstances.

THE PREVENTIVE AND CURATIVE TREATMENT OF ENLARGED GLANDS IN THE NECK IN CHILDHOOD.*

BY

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THE great frequency with which chronic enlargement of the superficial and deep cervical glands is met with in childhood, and the difficulties which have to be faced in conducting such cases to a successful issue, must always render the subject one of great interest to every medical man, especially as recent researches have thrown much light on the causation of the affection, and improved methods of treatment have given better results than formerly. It is now possible to avoid the prolonged suppuration, the unsightly scarring, and the constitutional infection with tubercle.

I propose to consider glandular enlargement arising from a chronic inflammatory and tubercular condition, and not the more unusual states, such as lympho-sarcoma and lymphadenoma. Of late years the conviction has been gradually forced upon us that nearly all cases of persistent lymphadenitis in the neck are tubercular. With this view I cannot entirely agree, and it appears to me that there is a broad distinction to be made in the following lines. In my opinion, chronically enlarged glands of the neck which resist treatment, whether general or local, should be divided into two classes, the pre-tubercular and the tubercular, that is to say, the simple chronic form is a pre-tubercular condition, which, if left untreated, passes slowly but surely into the tubercular form. It is not necessary here to describe the steps by which a chronically enlarged gland becomes tubercular, nor is it often possible to say from a clinical point of view that one case is tubercular and another is not. The best test is the reaction of the inflamed mass to treatment.

Before we discuss the preventive treatment, it is essential to inquire what are the causes of chronic lymphadenitis in children. In the first place, there can be no doubt that after an attack of scarlet fever, measles, or diphtheria, some affection of the glands persists, not necessarily tubercular, unless the child be the subject of tuberculosis elsewhere, or liable, on account of its family history or environment, to become so. The swelling in the glands is often, in the first place, due to septic absorption from the mucous membrane. More often, however, the affection can be traced to local causes, such as enlarged tonsils, adenoids, chronic rhinitis, carious teeth, chronic otitis media, impetigo, and parasites on the scalp.

To take these causes *seriatim*. It has been clearly shown by Dr. Sims Woodhead that certain cases of chronic enlargement of the glands of the neck are associated with the presence of tubercle bacilli in the tonsils and adenoids. The question of how the tubercle bacilli get into the tonsils is somewhat difficult to determine. It seems to me that their entrance is largely due to the ingestion of tuberculous milk and meat, and, to a less extent, to the lodgment of the bacilli on the tonsillar surfaces in the act of respiration. We know how frequently, in little children, Peyer's patches and the mesenteric glands exhibit tubercular changes, and as the tonsils are only Peyer's patches out of place, there can be no reason to doubt that, like the latter, being composed largely of lymphoid structure, they are particularly prone to pick up bacilli either of a chronic nature, as the tubercle bacillus, or of a more acute form. In the case of adenoids, the ingestion of tubercular milk, &c., cannot explain the presence of tubercle bacilli in them. As to the origin of adenoids, I have often thought they arise somewhat in the following way. In the acts of respiration dust containing bacilli of all descriptions must constantly be caught, so to speak, on the mucous membrane of the naso-pharynx, especially if it be slightly spongy and covered with mucus. The presence of bacilli excites an irritation and congestion of the surface mucous membrane, which spreads to the sub-mucous lymphatic tissue, and causes in it an hyperplasia, or overgrowth, resulting in the pedunculated masses we know as adenoids. The structure of these bodies is that of small, round, granulation cells, which are scarcely, if at all, dis-

tinguishable from the round cells found in the lymphatic glands. If, in the case of both tonsils and adenoids, the irritating bacilli be in the main non-tubercular, and the subject generally healthy, simple chronic enlargement of the sub-mucous lymphatic tissue, often of a fibroid nature, follows. But should tubercle bacilli be brought to those spots in abundance, or should the patient be unable to withstand the assaults of the few tubercle bacilli which are always present in dust, &c., then the enlargement is of that nature, and that point leads me to remark that Laser* is of opinion that the infection is frequently conveyed in the following manner. Little children in crawling about get their hands covered by dust and dirt, and then, putting their fingers in their mouths, infect themselves. Another mode of entrance is the habit children have of sucking toys, such as whistles, which are often dirty. And the rubber teat, known as a comforter, which is wet, and to which dust of all kinds adheres, is a source of infection, particularly when one is made to do duty for several children, one of whom is tubercular as often as not. So far, then, enlargement of the tonsils and adenoids may be either pre-tubercular or tubercular, and be associated with similar conditions of the glands. There is always this risk, that the former state will, if disregarded, merge into the latter state.

It is difficult to demonstrate tubercle bacilli in the tonsil, but one may take it that in about eight cases out of one hundred they can be found. It is necessary to cut through the whole thickness of the tonsil. It is somewhat remarkable that we rarely meet with a tubercular ulceration on the surface of the tonsil, but it may be that the bacilli are rapidly taken up by the leucocytes, and carried by the lymph and blood streams to the deeper part of the tonsils. Evidence of this is found in the fact that when tubercle bacilli are found in the tonsils, they are almost always situated at the base, and not on the surface. It is, of course, open to anyone to suggest that the infection arises from tubercular expectoration passing over the surface of the tonsils, since, in some of these cases, the lungs are found to be infected. But I am disposed to explain such cases of involvement of tonsils, gland, and lung in children as taking place

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* 'Deutsche Med. Woch.,' 1896, vol. xxii, p. 500.

in the reverse direction, first tonsils, then gland, then lung, by direct continuity. An instance of the direct continuity of tubercle from an external surface to the lung came under my notice at the Evelina Hospital for Sick Children. A child, aged four years, came to me with tubercular dactylitis of the metacarpal bone of the left thumb. This was scraped, and the wound healed. A year subsequently she presented herself with the wound broken down, and a second tubercular focus on the inner side of the elbow. From the appearances seen here, there could be no doubt that the lymphatic gland above the inner condyle had become infected, then inflamed, and softened, and had broken down, implicating the skin in the neighbourhood. Also in the axilla there were numerous enlarged caseating glands, and two in the posterior triangle. The child had nightsweats, and was much wasted. Over the upper part of the right lung a pleuritic rub was audible. A very thorough operation was done, and all the accessible tubercular material was removed, and three weeks after the operation the child was sent away to Broadstairs. On her return she looked well, and the skin wounds were all healed, but the pleuritic rub persisted. Eighteen months later I saw her, and she was then in an advanced condition of phthisis, and the posterior triangle was full of softened glands. The original lesion was in the metacarpal bone of the thumb, thence infection spread gradually along the lymphatics to the epicondyloid gland, to the axilla, posterior triangle, dome of pleura, and lung.

Carious teeth are well known to be an exciting cause of lymphadenitis, but the presence of tubercle bacilli in the tooth sockets had not been suspected until Stark,† in tracing the connection between caries and glandular tumours in forty-one cases, found in one or two of them tubercle bacilli in the teeth, or between the roots of the teeth, with caseous glands present, so that the importance of attending to children's teeth cannot be exaggerated.

Acute and chronic otitis media are frequently the starting-points of glandular swellings. When I see a little child thin and wasted, with a long-standing discharge from his ear, I suspect that one is dealing not with an ordinary suppurative condi-

† Munch. Med. Woch., 1896, vol. xliii, p. 145.

tion, but with a tubercular ostitis of the tympanic cavity, and of the mastoid process, and this suspicion is confirmed if, after careful drainage of the ear through the mastoid process, the discharge continues despite steady persistence in the usual antiseptic measures. In orphanages there are many children suffering from chronic otitis media and enlarged glands. Now, many of these children's fathers or mothers, or both, have died early of phthisis, for it follows that orphan children are the offspring of parents who have died from diseases, such as phthisis, prevalent in middle life. My experience as Honorary Aural and Throat Surgeon to the Stockwell Orphanage bears this out, and I have had to deal with some inveterate cases of tubercular otitis media from that institution, and not always so successfully as I could have wished, as the disease has often been of some years' standing before the child's admission. As a rule, however, a discharge from the ear is a chronic suppurative process, and the associated glandular enlargement is of a simple nature—at least for a time.

Chronic hypertrophic rhinitis is often an extension forwards to the nose of the same sub-mucoid hyperplasia, as exists with adenoids in the nasopharynx, and, like them, is especially seen in children of feeble constitution; the so-called scrofulous upper lip is well marked in these cases. The chief importance of chronic rhinitis consists in the fact that it is accompanied by the presence of a foul discharge, and often of crusts, absorption from which tends to excite sympathetic irritation in the lymph-glands. I do not think it is necessary to enlarge upon the relationship between impetigo, parasites on the scalp, and lymphadenitis. As a rule, the inflammation excited is of an acute character, and a gland suppurates. But the danger consists in the fact that one suppurating gland is frequently a source of chronic enlargement in a whole chain.

It is, therefore, now possible to emphasise the following points:—

1. The local causes of chronic glandular enlargement in the neck may be (a) non-tubercular, or (b) tubercular. In many cases the non-tubercular is identical with the pre-tubercular condition.

2. The chronic lymphadenitis is again either (a) simple and non-tubercular, or (b) tubercular; and the same remark as to the possibilities of the non-tubercular assuming a graver form applies equally.

The preventive treatment may therefore be summed up under two headings:—

(a) Remove such local causes as the above-mentioned, and (b) employ the usual measures for the improvement of the general health. The best of all is undoubtedly prolonged residence at Margate or Broadstairs. With reference more particularly to the question of enlarged tonsils, adenoids, and hypertrophic rhinitis, I would emphatically urge that they should not be allowed to persist. The old-fashioned prejudice against removal of the tonsils must be overcome, and a large portion of them must be taken away with the guillotine, and the naso-pharyngeal cavity cleared. If any signs of chronic rhinitis are present, it is always advantageous to freely scrape the mucous membrane of the inferior meatus, and the inferior turbinated bones. Delay in operating is fraught with danger, and frequently leads to disastrous consequences of life-long duration.

The *curative* treatment of the enlarged glands themselves. These may be met with in the following states:—

(a) The glands may be of no great size, firm and movable, and more or less discrete, without any involvement of the superficial tissues.

(b) There may be present a large matted mass of glands, several of which are undergoing caseation, but the superficial tissues and skin are not involved.

(c) A chronic subcutaneous abscess may be present, and the skin may be healthy, or it may be thin, and with a bluish red tint showing that it is involved in the extension of the inflammation.

(d) There may be a sinus leading down to a mass of chronically enlarged glands.

With reference to the so-called palliative treatment, applications of liniment, such as Linimentum Iodi, are useless, and, as they irritate the skin, are to be condemned. The only application that may be said to have any value is oleate of mercury, 5 to 10 per cent., carefully applied to the parts. I have often seen small discrete glands of no long standing disappear when the oleate has been applied, but only when the exciting cause of the enlargement has been removed at the same time; and doubtless the disappearance is as much due to the removal of the cause, as to the application of the mercury. Practically it comes to this, that no local treatment will avail so long as the excit-

ing cause is at work. Remove the latter, and in many cases the glands will subside. Too frequently, however, it happens that the lymphadenitis persists, in spite of the removal of the cause. In such cases the glands should be removed, even although one is not quite certain that they are tubercular, and glands which have been removed on suspicion, according to Mr. Miller,[*] of the Royal Infirmary, Edinburgh, have almost invariably turned out to be tubercular. At any rate, so long as glandular enlargement is present, there is a probability of general tubercular infection supervening, so that any persistent enlargement of glands should be treated by operation.

With reference to the form of operation, cases coming under the heading (a), that is, firm and movable, discrete, and without any involvement of the superficial tissues, are eminently fitted for total excision. This is often a difficult and, may be, a dangerous operation, but with practice and care and attention to detail, there is a minimum risk, and he offending masses can be removed by one or more incisions in such a way that a linear scar only is left. To remove the submaxillary glands, a horizontal or oblique incision should be made, with its centre about half an inch below the jaw, and midway between the symphysis and the angle. The resulting scar is then well concealed. Care should be taken not to divide the facial artery, and the inframaxillary branch of the facial nerve must not be cut. If the glands beneath the sterno-mastoid are involved, the incision is made along the anterior border of that muscle. Frequently the glands lie deeply, and may be adherent to the carotid sheath, so that the skin incision should be free, as they are very difficult to remove through a small opening without incurring undue risk. It is most important to remember that all the tissues down to the surface of the gland itself must be freely divided. If this be done, the gland will often easily shell out, and there is no risk to important structures. When the glands are numerous, every vessel must be tied as it is met with, and if there is any doubt as to the contents of the pedicle of a gland, it is best to clamp it before dividing, as air may readily enter veins, or embarrassing arterial hæmorrhage in a deep wound occur. There is a class intermediate between (a)

* 'Scottish Med. and Surg. Journ.,' 1897.

and (b) mentioned above, in which only one gland has softened, but there are a number of smaller glands which appear to be capable of removal. An attempt may be made to dissect the latter out, but anyone who has had much experience in this direction knows how tantalising and tedious such operations are. One finds that the external appearances and "feel" of the enlarged glands are very deceptive, and, in the course of the operation, other deeper and hitherto unfelt glands are met with, which are in positions not safely accessible, so that it is necessary to close the wound, leaving a large number of infiltrated glands behind.

If, in the course of dissecting out a caseating gland, it should break or burst, a very likely event, suppurative and tubercular infection of the wound follows, and prevents primary union. I believe, then, that the plan first suggested and adopted by Mr. Watson Cheyne is the best. The wound should be thoroughly irrigated out before closure, and an emulsion of (one in five) carbolic acid applied freely. When this is done, and in all cases of large cavities, drainage of the wound for twenty-four hours must be provided. This procedure involves some risk of carbolic acid intoxication, and the wound should be freely irrigated with boiled water before the operation is finished.

(b) If there be a large mass of matted glands, several of which are undergoing caseation, the operation par excellence is incision into the mass, and thorough scraping with a sharp spoon. By this means all the softened stuff can be got away, and the capsule can be left behind quite clean. Sometimes, however, it is very difficult to get rid, even by the most rigorous scraping, of a "tough, living stump of gland" firmly adherent to the capsule. It is well to dissect this remnant away with a scalpel, if the risk of injuring important structures be not too great, because it is liable in its turn to break down, and may cause a second operation. It may even be possible to detect with the finger inside the capsule a neighbouring gland. Such an one may be dissected out through an incision in the capsule. Many surgeons like to treat the cavity freely with an emulsion of iodoform and glycerine, but I have lately secured as good, if not better, results by freely applying the following: menthol one drachm, Spiritus Vini Rect. one ounce, glycerine to one pound. Drainage should be provided, and the re-

mainder of the wound closed. If there is much infiltration of the tissues around, the application of a hot boracic compress is desirable for the first forty-eight hours; otherwise a firm, equally-distributed dressing, well applied, answers every purpose.

(c) If a chronic subcutaneous abscess be present, the state of affairs is serious, because, once the skin is involved in this way, the tubercular infiltration in it is particularly liable to spread. I have seen several cases of this nature, in which a neglected suppurating cervical gland involving the skin, has been followed by an extension of the tubercular process in the skin from one sterno-mastoid to the other. Such a case is under my notice now, that of a lady who suffered from tubercular glands in childhood, which were allowed to burst, and have now resulted in a tubercular infiltration of the skin, not only from ear to ear, but both auricles are invaded, giving rise to much pain and distress.

In the treatment of a superficial abscess arising from a broken-down gland, it is futile to merely open the abscess, because, on careful examination of the superficial abscess cavity, a track will be found leading through the deep fascia into the centre of a caseating mass. The discharge from the latter bursting through the deep fascia is the cause of the subcutaneous abscess. In such cases, after the superficial abscess has been opened, the aperture of the deep fascia must be found and enlarged, and the caseating mass below must be scraped out.

With reference to the treatment of the undermined and infiltrated skin, this should be, when not too extensive, excised until clear margins of healthy skin are obtained. These should be sutured together, with the exception of a small spot in the most dependent part, where a drain should be inserted into the deepest recesses of the cavity. If, however, the tubercular infiltration of the skin is so extensive that it cannot be dissected away, it is advisable to scrape freely with a sharp spoon, and then apply either a 50 per cent. solution of lactic acid, or the menthol solution mentioned above. I have obtained equally good results with both, but lactic acid is the more painful. This hint as to the lactic acid was obtained from its well-known efficacy in the treatment of lupus.

(d) If there is a sinus leading down to a mass

of chronically enlarged glands, the sinus should be either enlarged and scraped or dissected cleanly away. I prefer the latter, and the glands either sharp-spooned or, if circumstances permit, dissected out. In such a case as this, after dissection out of the sinus, it is essential to secure a dry cavity below it, and then close the wound at once with horse-hair sutures, trusting to firm pressure of the dressings to prevent excessive effusion into the cavity. Sterilised iodoform powder, freely dusted into the cavity, is of great value as a desiccating agent. The importance of avoiding tubercular infiltration of the skin, and, if it be present, of preventing its spread, cannot be over-estimated.

In children, complete immobilisation of the parts after the operation is essential. This can be effected by inclining the head on the affected side towards the shoulder, then putting one bandage round the neck and head, a second bandage as a spica round the shoulder and chest, and a third bandage disposed in such a way as to connect the two. If the nurse then be directed to stitch the whole mass of bandages together, from the point of the shoulder to the highest point of the bandage on the head, little movement can take place in a child of tractable disposition. But, if the patient be querulous and restless, a poroplastic collar is a very useful adjunct to bring about the successful termination of the case.

The treatment of the depressed and unsightly scars resulting from the bursting of tubercular abscesses is a matter of some difficulty. If the scars are small, they may be dissected cleanly out, and a knife freely passed into the subcutaneous tissues around, the edges of the skin being then united with horse-hair sutures, so that primary union is obtained. The lines of incision for this little operation should be so planned out that they fall in the natural lines of the neck. Sterilised horse-hair should be the chief suturing material in all cases. If the wound is large, it may be necessary to reinforce the horse-hair with a few strands of silkworm gut of the finest possible fibre, which is sold by instrument makers under the title of " opthalmic " silkworm gut.

I hope I have indicated the importance of recognising the facts that a simple local cause, such as adenoids or enlarged tonsils, may have very far-reaching and even life-long consequences, and that once enlarged glands have occurred, their removal is a matter of the utmost consequence to the patient.

A CASE OF POSTERIOR BASIC MENINGITIS WITH PALSY OF THE LEFT ARM,
TERMINATING IN COMPLETE RECOVERY.

Under the care of Dr. CHEADLE at St. Mary's Hospital.

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I AM indebted to Dr. Cheadle for permission to publish the following case, which was under his care at St. Mary's Hospital from October 16th, 1898, to January 26th, 1899.

John B., aged four months, was admitted for retraction of the head and paralysis of the left arm.

The infant, a first-born child, had been in good health until three weeks before admission, when he developed " a cold in the head, and sore throat." The left arm was noticed to be paralysed one morning, this condition having apparently come on quite suddenly. From the time of the onset of the illness there gradually developed retraction of the head, and arching of the back. Previous to this, the child, except for " slight snuffles " shortly after birth, had taken the breast well (the only food that had been given), but now he was sick and feverish, irritable and altered in disposition. A fortnight previous to admission he had a slight convulsion, and the mother noticed a squint. The parents were both in good health, and there had been no miscarriages, and from neither could any history of syphilis be ascertained. When first seen, the child was well nourished, and lay with his head considerably retracted, and with some opisthotonos. Both hands were moved, and the right arm was natural, but the left upper arm remained motionless, and its condition resembled very closely that of a limb in a case of anterior poliomyelitis. He was quiet when left alone, but resented movement, especially of the paralysed limb. No fulness in the region of the shoulder joint was detected, nor was there apparent wasting of the limb, though the muscles seemed more flabby than the corresponding ones in the right. Both lower extremities were moved

well, and the superficial and deep reflexes were present. The anterior fontanelle was distinctly bulging. The upward movement of the eyes seemed to be impaired; there was nystagmus, but no squint. The optic discs were natural, the pupils reacted to light, and the conjunctival reflexes were present. It was doubtful whether the child could see.

The temperature was 99°, and the pulse 96°. Nothing abnormal was detected in the heart or lungs. There was occasional vomiting, but the abdomen was not retracted, and neither liver nor spleen were enlarged, the bowels were open, and the motions natural. Upon examination of the ears nothing was found that accounted for the condition.

The weight upon October 12th was 13 lbs., and the circumference of the head, noted in November, was 16¾ inches.

The treatment that was adopted was as follows. The mother suckled the child three times in the day, and the remainder of the food was supplied in the form of peptonised milk. Dr. Cheadle prescribed three-grain doses of potassium bromide every six hours, alternating with powders containing one eighth of a grain of Dover's powder, and a quarter grain of grey powder. Later, the dose of grey powder was raised to half a grain.

The course of the illness : During the first week all the serious symptoms remained about as severe as on admission, and the child seemed to lose ground, but the temperature did not rise above 99°. During the early part of November there was a slight gain in weight, but the cerebral symptoms were as prominent as when first seen, and there was a slight discharge of pus from the left ear.

On November 23rd it was noted that the left arm was regaining power, though the retraction of the head was marked, but never extreme. During the last week in November there was an exacerbation of the vomiting, and some loss of ground again. Nasal feeding was tried to assist in arresting the vomiting, but did not succeed in its object. At the commencement of December distinct improvement began, the vomiting became less frequent, and the gain in weight was distinct. Massage was commenced to the paralysed arm. Throughout December the improvement was maintained, though at one time slight weakness of the

left facial nerve was observed; by the end of the month the vomiting had ceased, and the arm had mostly regained power. The last symptom to disappear was rigidity of the neck and retraction of the head. In January there was a suspicion that hydrocephalus might be supervening, the head increasing in diameter, and appearing unusually large and unwieldy, the fontanelle also remained tense. The bright mental condition and obvious general growth of the child negatived this, and it was also evident that he could both see and hear, so that on leaving the hospital upon January 26th he appeared, except for some weakness of the cervical muscles, to be quite cured, and since leaving the hospital he has been brought up for observation, and remains well.

This case is of considerable clinical interest, for it represents a complete recovery from a condition which is always alarming, and very frequently fatal. In addition the paralysis of the upper arm is a complication that is exceptional in cases of this nature.

There can be no reasonable doubt that the illness was a mild attack of that form of meningitis which is termed posterior-basic meningitis from the localised exudation which is found over the brain in the region of the posterior fossa of the cranium. This disease, though well recognised, especially in hospitals devoted to children, is, perhaps, hardly as generally known as it deserves, owing to the slight references that are made to it in the text-books upon medicine. The very fact that such a complete recovery as the above can occur, makes it important to recognise the leading features of the disease, for the gloomy prognosis that must follow the diagnosis of tubercular meningitis for which it is so easily mistaken, may be completely falsified. This case, though an example of the milder type of posterior-basic meningitis, nevertheless exemplified several of the clinical features upon which the diagnosis rests, and also indicated some of the complications that are apt to arise as results of the infection. These complications are of especial interest and importance, for though recovery from the actual meningitis may occur, they may leave the child mentally crippled for life, or prolong its existence only that it may die later from a progressive hydrocephalus. The age of the patient (four months), the fact that it was breast-fed, and the child of

healthy parents, militated strongly against tubercular meningitis. Its commencement, after a definite, though obscure, feverish attack, is also suggestive of the post-basal form. The unusual complication of weakness of the arm introduced a difficulty, for there are cases of anterior poliomyelitis affecting the higher part of the cord, for example, the upper part of the cervical enlargement, which may be complicated by severe cerebral symptoms. These symptoms resemble very closely those of meningitis; but in such case the cerebral affection rapidly improves, and the paralysed limb recovers much more slowly, and usually imperfectly. In this case it will be noticed that the arm recovered before the retraction of the head, and vomiting ceased. The definite retraction of the head and arching of the back are very characteristic of this form of meningitis, in which these manifestations may reach the most extreme degree, while in the tubercular form the retraction of the head is usually slight, and often there is only a stiffness of the cervical muscles.

Such symptoms as the vomiting, squint, and convulsion were indecisive in either direction. The course and duration of the illness lasting, as it did, over months, is another striking feature well recognised in this form of meningitis, very exceptional in the tubercular. It may occasionally happen that a tubercular meningitis runs a protracted course with gradual hydrocephalus, if the virulence of the infection is slight, and the deposit localised to the region of the pons, medualla, and roof of the fourth ventricle, but this is quite unusual.

The condition of the ears in infants with retraction of the head and cerebral manifestations, is an important one, for these symptoms have sometimes entirely disappeared when a free discharge from the ear has once been established. In this case on one occasion a small amount of pus was found in one of the ears but this was quite insufficient to account for the symptoms. Two important complications in this disease, blindness and deafness, recall similar events occurring in the epidemic form of cerebro-spinal meningitis. In post-basal meningitis the condition may be gradually recovered from, though definitely ascertained to be present at the outset. That there was no optic neuritis is the rule in this disease. The most remarkable complication, depending on the peculiar localisation of the inflammation to the roof of the fourth ventricle is hydrocephalus, and it is a complication so frequent as to be always dreaded. A useful precaution to assist in the diagnosis is to measure the circumference of the head early in the illness, and another useful precaution is to weigh the child, for in prolonged cases there is extreme wasting. Throughout the course of the case recorded above, the maintenance of the weight and equable temperature (which, in some cases, may be most irregular) were hopeful signs. I am indebted to Dr. Lees for showing me an account of a case of post-basal meningitis in which, as in this, a palsy of the upper arm upon one side was noted. It is difficult to explain this complication with certainty. In Dr. Cheadle's case, as he pointed out, the condition very closely resembled a mild anterior poliomyelitis. Occasionally arthritis has been noticed in this disease, and the possibility of an arthritic atrophy, or pseudo-paralysis in connection with disease in or around the left shoulder-joint was considered, but there was no evidence of any such complication. If due to a spinal meningitis spreading from the cranium, it is remarkable that it was limited so completely to one extremity, and to a limited part of that only. Finally, Dr. Lees, in discussing his case, pointed out that the proximity of the meningitis to the region of the cerebellum must bring to mind the possibility of some disturbance of its function, which may be manifested in the limbs.

THE third edition of 'The Essentials of Chemical Physiology,' by W. D. Halliburton, M.D., F.R.S., published by Longmans, Green & Co., of 39, Paternoster Row, London, has afforded the author an opportunity of making the alterations and additions rendered necessary by the rapid advances during the past few years in the subject of chemical physiology. Particular attention must be drawn to the teaching on the subject of the pigments of the urine, because it is rare to find such a difficult field of research so clearly and concisely explained. Lesson xii, on pathological urine, is a wonderful example of lucid and perspicuous explanation. In connection with the absorption bands shown by hæmoglobin and its compounds in the ultra-violet portion of the spectrum the author has inserted two illustrations which will be found very serviceable.

DEMONSTRATION OF CASES

AT THE MEETING OF THE

NORTH-WEST LONDON CLINICAL SOCIETY.

Held at the North-West London Hospital,
January 18th, 1899.

Dr. KNOWSLEY SIBLEY in the Chair.

Dr. G. A. SUTHERLAND showed a case of combined mitral and aortic disease in a boy aged nine years. He had suffered from acute rheumatism, and later from pericarditis and endocarditis. When discharged from the hospital the signs of mitral obstruction and regurgitation were well marked, but there was no evidence of aortic disease. A month later he was seen again, and the characteristic murmurs of aortic incompetence were present, the diastolic element being especially well marked. Dr. Sutherland discussed the possible explanations of the development of the aortic lesion. Firstly, that the pericardial murmur had been in reality aortic, which he thought improbable, as the friction sound had entirely disappeared during treatment. Secondly, that after the boy left the hospital there had been a fresh attack of endocarditis affecting the aortic valves. As the boy's general health had not been affected in the interval, he thought this unlikely. Thirdly, that the pericardial inflammation at the base of the heart, either by direct extension to the aortic valves, or by cicatricial adhesions around the aorta, had led to the aortic incompetence which had developed.

Dr. KNOWSLEY SIBLEY showed a case of rheumatism in a man, twenty-eight years of age, who was formerly in the City Police. The onset of the disease had been gradual; four years ago he was perfectly well. There was no family history of rheumatism, and nothing to account for the patient's condition unless it was caused by exposure in the course of his duties. The progress of the disease had been a gradual one, first stiffness and pain about the shoulders and neck; one by one more of the joints became affected, and a few weeks ago he had been unable to raise himself from a chair without assistance, or to get the right hand to his face. He had had some thirty of the Tallerman hot air baths, and had very considerably improved; in fact, so much so as to be able to get about without discomfort, to raise his hands to his face, and to dress and undress himself with ease. The points of interest about the case now were that the thorax was almost completely rigid, all movements of the ribs being absent, the result being that with movements of inspiration there was a marked sucking in of the supra-clavicular spaces, and the respiratory movements were almost entirely abdominal. There was thus a marked tendency to bronchial catarrh. The spinal column was also perfectly rigid; the dorsal and lumbar curves were more or less natural, but the cervical was considerably deformed, the head being thrown forward in such a way that the patient was unable to look up; the neck was rigid, and all attempts of movement only produced contraction of the cervical muscles; there was neither flexion, extension, nor rotation. Dr. Sibley brought the case forward in order to elicit an opinion from the surgeons as to the possibility of operating on the cervical curve, or breaking down the adhesion of the cervical vertebræ under an anæsthetic.

Dr. SIBLEY also showed a case of commencing paralysis agitans, limited to the left arm, in a man, fifty-six years of age, a carpenter by trade. The patient attributed the condition to the fact that he had often severely injured and wounded this hand in the course of his work. The condition was of twelve months' duration. There was also a somewhat fixed, staring expression.

Dr. PARRY showed a case of unilateral brachial neuritis. The patient was a man of about thirty-five, who was seized with very severe shooting pains in the left arm. He was a painter, and presented a well-marked blue line on his gums, and had had colic and constipation. The muscles supplied by the musculo-spiral nerve were wasted, and there was tenderness in the region of the cutaneous distribution of the same nerve. There was no wrist-drop, and no absolute paralysis. The question of ætiology was discussed, and Dr. Guthrie expressed the opinion that the affection was more likely to have been caused by gout due to lead poisoning than by lead only, for the following reasons: it was unilateral, the pain was much more severe than is usual in neuritis of lead origin, and there was no wrist-drop.

Dr. PARRY also showed a case of aural vertigo

in a woman aged thirty-nine. The patient complained of vertigo, which came on two years ago, after a fright. Twelve months later tinnitus and deafness, especially in the right ear, followed. She was very giddy, and would fall if she could not catch hold of something to support her, but she never loses consciousness. There was a loss of bone conduction for sounds, absolute in the right ear, nearly in the left. Dr. Parry said he thought the condition was much more common than is usually acknowledged, he had seen several cases in the last year, either as out-patients, or in private practice. He was giving bromide of potassium and tincture of belladonna for the central disturbance, using blisters behind the ear for the local affection.

Mr. TEMPLETON showed a case of subastragaloid amputation, which he had performed for injury to the anterior part of the foot, inflicted by the wheel of a tramcar. The patient was a little girl, two years of age, and the stump presented a thick pad of fat, the naaural heel, which was freely movable. The scar was well to the outside. The two limbs were of exactly the same length, and the muscular development was almost as good in one leg as in the other.

In comparison with the stump after Symes' amputation, he pointed out that in this case it was larger, thus affording a greater support, and that the length of the two limbs was the same, whereas in Symes' amputation there was over an inch shortening. The child walked perfectly well.

Mr. MAYO COLLIER showed a series of cases of ear affections mostly at one time suffering from marked deafness, with or without discharges, of many years' standing, but now free from ear discharge, and able to enjoy ordinary conversation with ease, and quite free from noises or attendant discomfort.

He pointed out that these good results in each case had been arrived at by first treating the nose, so as to ensure free nasal respiration both by day and night. The first essential in the treatment of these cases is to ensure a healthy condition of the Eustachian tube, and to restore the patency of the canal leading into the tympanic cavity. This could only be attained by ensuring a free and constant access of air to the post nasal space.

Any obstruction to nasal respiration entailed congestion of the post-nasal space and swelling of the Eustachian tube, and obstruction to the free passage of air into the tympanic cavity.

It was not so much the mobility of the drumhead that was to be aimed at, as a free and constant supply of air to the tympanic cavity, without which hearing was never improved, and a chronic discharge seldom cured.

The air in the tympanic cavity was the conductor of the vibrations from the outside, and a tympanum free from air was like the exhausted receiver of an air-pump, incapable of transmitting or carrying waves of sound.

Case 1.—Deaf to all conversation. Discharge for seven years from right side, offensive, much pain at times referred to mastoid. Tongue always dry in morning; snores. Large perforation, yellow, offensive discharge. Many granulations round opening. Enormous turbinal body both sides. Washing, and subsequent removal of lower half right turbinal body effected cure and restoration of hearing in six weeks.

Case 2.—Girl, aged eighteen. Deaf to conversation, noises in ears, general pharyngitis, general anæmia, headaches and bad health, dry tongue in morning. Treated by Politzer's bag, wash and sprays for eight months, nose not operated on purposely to compare results with other cases, no improvement in throat, hearing varies; better for a few days, then lapses. Nose operated on three weeks ago, throat comfortable, hearing much improved.

Case 3.—Man, aged twenty-three. Deaf since childhood. Noises in ears, no discharge. Face, palate, and teeth much distorted. Snores at night, dry tongue in morning. Marked nasal obstruction both sides. Ten years' treatment by Politzer and washes produced no improvement. After operation with galvano-cautery and forceps, in one month hearing so far improved as to enable him to appreciate easily ordinary conversation.

Three other cases were quoted illustrating similar points.

MESSRS. WRIGHT & Co. of Bristol have just issued a very entertaining and amusing volume by Dr. Fernie of Folkestone on "Animal Simples." The author in a very witty preface introduces his readers to a clever dissertation on a subject which he has evidently made peculiarly his own. The book is good reading in every sense of the term and can be heartily recommended.

ANTISYPHILITIC TREATMENT ;FOR HYDROCEPHALUS.

(From 'The Therapeutic Gazette,' April 15th, 1899.)

D'ASTRUC has described two forms of hydrocephalus, commonly called syphilitic. The first form is of syphilitic origin, due to the arrest of development of the brain, which is dependent on the dystrophic influence of the parental disease. Under such circumstances there are found only the cerebral malformations without the active lesions of hereditary syphilis. This condition could rightly be called parasyphilitic hydrocephalus. The second form is a true syphilitic hydrocephalus, developing during the first months of life and dependent on the cerebral localisation of an active hereditary disease.

The essential lesions, as shown by autopsies, consist in alteration of the ventricular ependyma and the choroid plexus. There is in these regions a marked infiltration of embryonic cells which may cause softening of the upper portion of the striate-ganglia.

Sometimes hydrocephalus is the first indication of hereditary syphilis. More often it is preceded by lesions of the skin and mucous membrane. The affection, as in non-specific hydrocephalus, may be acute, subacute, or chronic. It usually terminates fatally.

Edmund Fornier, out of 170 collected cases of hydrocephalus due to hereditary syphilis, notes that five were benefited and six cured by antisyphilitic treatment.

Audeod ('Revue Medicalè de la Suisse Romande,' Jan. 20, 1899) reports a case of a child born of a mother who showed the signs of syphilis and had suffered from a number of miscarriages. After treatment she carried a child to full term, which four weeks after birth exhibited coryza and other active syphilitic surface lesions, such as mucous patches. The symptoms disappeared under mercury and iodides, but recurred later. When four months old, hydrocephalus was first noted and rapidly became more marked. The child suffered from nystagmus, and there was a progressive loss of intelligence. Under the influence of specific treatment the symptoms rapidly improved, and in a year had entirely disappeared.

There can be little doubt that syphilis is a common cause of hydrocephalus. The disease is much more common among children of syphilitic parents than among any others. In certain families hydrocephalic children alternate with those which are in other ways obviously syphilitic, or are born after a series of miscarriages. Hydrocephalus is often associated with other marks or symptoms, and the signs of syphilis are much more frequent among hydrocephalic children than they are among those not thus afflicted; and finally, hydrocephalus is sometimes cured by specific treatment.

It is obvious that the parasyphilitic form of the affection—i. e. that not dependent upon active specific lesions, but upon the dystrophic influence of the syphilitic heredity—is not to be reached by medication, hence it would seem wise to make but a single vigorous effort to influence a hydrocephalic child of syphilitic parentage by specific treatment; this failing, to abandon a treatment which unless it accomplishes its object can work only ill. Mercury, in the form of inunctions or hypodermic injections, is the drug on which main reliance is to be placed, the iodides being also used in full doses.

Painful Menstruation. — Lawrence ('International Journal of Surgery') concludes as follows: (1) Painful menstruation is not a disease, but merely a symptom found in various pelvic diseases. (2) Those classifications which place it as a disease are misleading, and should be discarded. (3)The physiology of menstruation, a thorough knowledge of pelvic pathology, and a broad, careful habit of study and thorough case-taking are necessary in order that menstrual pain be rightly construed. (4) Many of the cases due to the uterus, tubes, or ovaries may be cured in the early stages by simple means, whereas neglect places them in a position demanding serious operative treatment. (5) Painful menstruation in a sterile patient is strong evidence that there is tubal inflammation with occlusion of tubes. (6) Operative procedures should be reserved for those cases in which there is positive pathological indication; neurotic and anæmic cases being treated by other and more appropriate measures. (7) As a symptom, menstrual pain is often of such grave import that it should always receive the most painstaking study. If this should be the rule, many patients will be cured without operation.— *Medical Record*, April 22nd, 1899.

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* Specially reported for The Clinical Journal. Revised
by the Author.

NOTICE.

ON MALIGNANT TUMOURS OF THE KIDNEY.

BY

J. BLAND SUTTON.

IN 1893 I ventured to publish a book on tumours;
during the eight years preceding its birth I ac-
cumulated a mass of records, with the hope of
being able to furnish a fairly complete account of
the various genera of malignant tumours to which
each organ is liable. In this I was deeply dis-
appointed, for it soon became clear to me that
although the views held in regard to malignant
tumours generally were sound enough, yet on deal-
ing with tumours attacking particular organs the
facts were sparse and records unreliable.

The bones illustrate this very well: the litera-
ture relating to primary sarcoma of bone is enor-
mous, and museum material abundant, but on at-
tempting to estimate the relative liability of each
bone, then the insufficiency of reliable evidence
was too manifest. Nevertheless, my self-imposed
task was full of profound interest, because it re-
vealed that the progress, complications, and life-
destroying powers of sarcomata, even when the
microscopic characters appear identical, vary
greatly according to the bone primarily occupied.

The greatest hindrance to the investigation was
the absence of complete records, for instance, in
the case of museum material, the facts relating to
the specimen were easily verified, and, when neces-
sary, the histologic characters of the tumours also;
but in the majority of specimens the clinical his-
tory was defective, especially in the case of those
patients who survived the operation: even in
many where the ultimate issue was obtainable, and
where every circumstance made it appear reason-
able that the end was due to the secondary effects
of the tumour, it is rare for the matter to be
absolutely determined by a *post-mortem* examina-
tion of the body. Then, in the records relating to
patients in which the tumours have not been pre-
served, the microscopic characters in many cases

are not attested by competent pathologists, and as result we find an enormous literary rubbish heap of false facts.

In the case of the kidney a different difficulty arose, in this instance clinical facts are very abundant, but the incompleteness rests with the pathologist. Malignant tumours of the kidney are very fatal, and, even when successfully removed by the surgeon, the rapidity with which they recur is so great that death ensues before the facts and interest of the case leave the surgeon's minds. We have thus a great number of complete records which testify to the deadly nature of these tumours, and also much valuable information regarding their age distribution, but we greatly need more accurate knowledge of the nature of the malignant

The kidney is a compound gland containing a multitude of complicated (uriniferous) tubules lined with epithelium. These tubules open into a dilatation (the pelvis) at the upper end of the ureter. The renal pelvis, with its recesses (infundibula), consists of striped muscle fibre lined with epithelium. The sinus of the kidney, besides accommodating the ureter, renal vessels, and nerves, is occupied with connective-tissue, which is particularly abundant in late fœtal life and at birth. In addition, small, detached adrenals are occasionally found embedded in the renal cortex immediately beneath the capsule. The responsibility of giving birth to various genera of malignant renal tumours has been fastened on these various tissues.
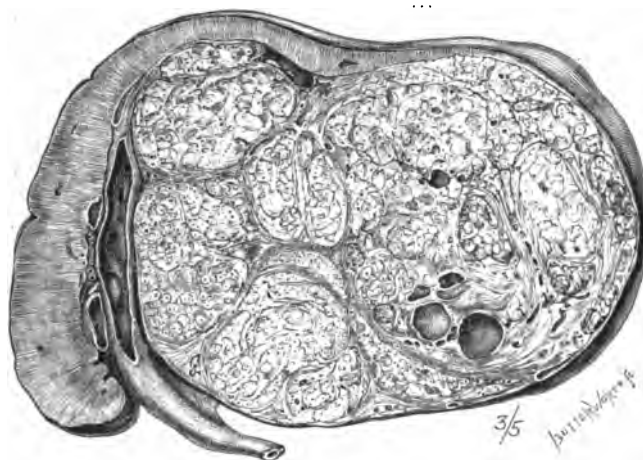
Fig. 1.—A renal sarcoma in section from a boy aged twenty months.

intrinsic renal tumours occurring in adults. During the last ten years a great deal of very good work has been accomplished in this direction, and in this paper an attempt will be made to summarise the results.

Year by year we realise more definitely our deep ignorance of the cause or causes (pathogenesis) of tumours. We are bound to rely on structure (histogenesis) for taxonomic purposes, and in dealing with compound organs embryology affords help, and rarely morphology may be used as a delightful condiment to our ideas. It is a fact that the structure and embryology of an organ are guides to the characters of the tumours which may arise therein, and the doctrine of tissue prototypes is admirably exemplified by renal tumours.

It will be noted that I have carefully avoided all reference to tumours arising in the peri-renal tissues, for, although the kidney may become incorporated in such, yet they cannot be described as renal tumours.

The architecture of the kidney would teach us to expect tumours of an epithelial type in the cortex, and those of connective-tissue construction in the sinus; this is in the main true, but the fact was determined by observation, without the least aid from inference.

A critical analysis of a very large series of records proves clearly enough that malignant renal tumours have a peculiar age distribution. Thus during the first five years of life they are common, then follows a period of comparative immunity.

The second period of liability is from thirty to fifty. Of course, sporadic cases occur between infancy and thirty, but they are relatively infrequent. It is also very remarkable that the tumours in the infant and adult periods of life not only differ remarkably in structure, but arise in different regions of the kidney, for the renal sarcomata of infant life are lodged in the pelvis of the kidney, and those of adult life originate mainly in connection with its capsule.

The malignant tumours which have the most intimate connection with the renal tissues are carcinomata, and originate from the epithelium of the uriniferous tubules.

nective tissue of the renal sinus, and gradually distend the cortex until the tumour is surrounded by a thin capsule formed of expanded secreting tissue of the kidney. On this account these tumours are described as being encapsuled, but it is a spurious encapsulation formed partly by renal tissue, and in part by the true capsule of the kidney (Fig. 1). On section, such sarcomata are yellowish-white, and the cut surface is often dotted with groups of small cavities, due to secondary changes, especially when the tumour is very large.

The base of such sarcomata is connective tissue containing cells of various shape and size: some are round or oat-shaped, and others are spindles.
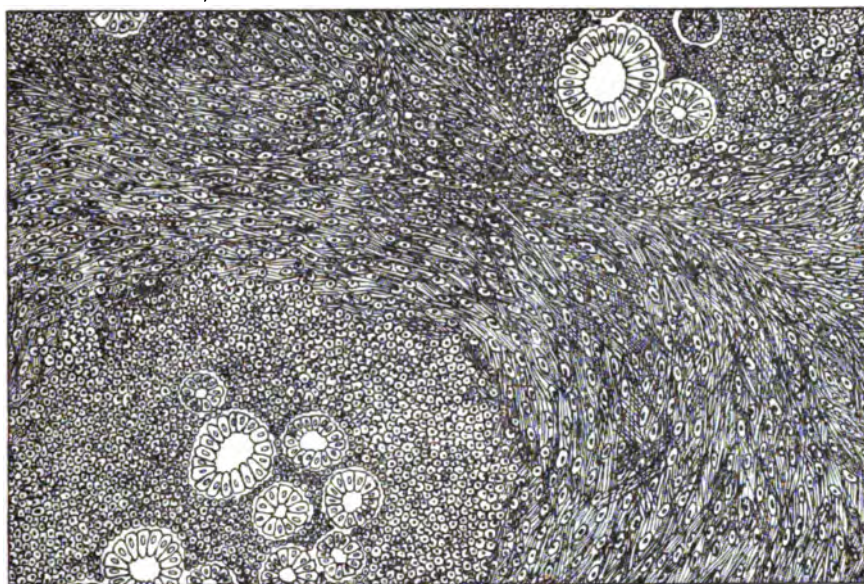
Fig. 2.—Microscopic characters of the tumour.

Each genus differs not only in structure and relation to the kidney, but in the clinical effects which each originates; indeed, they only agree in one respect, and that is the disastrous results they entail on the individual unfortunate enough to possess them. It will, however, be convenient to discuss these tumours in two groups, according to their age distribution.

Sarcomata of infancy.—During the first five years of life the kidneys are exceptionally liable to sarcomata possessing peculiar characters. It has, during the past five years, been definitely determined that these sarcomata originate in the con-

In a fair proportion of specimens many of the spindle cells present the cross striation so characteristic of the fibres of voluntary muscle, and they lack a sarcolemma. When these cells are present the tumour is sometimes termed myosarcoma.

In other examples the ground substance contains groups of tubules lined with regularly-arranged cubical epithelium, Fig. 2, and in sections resemble a number of renal tubules cut transversely.

A careful microscopic study of these tumours, as well as a critical analysis of the descriptions published by others, indicate that when the striped

cells are very abundant the tubules are, as a rule, absent. In examples containing many tubules, as well as those in which striped spindles are numerous, the round, oat-shaped, and spindle sarcoma cells are equally abundant. It has been suggested by Paul that, as the most typical myosarcomata are more sharply delimited from the other varieties, the tubular elements may be derived from the kidney. I did not at first acquiesce
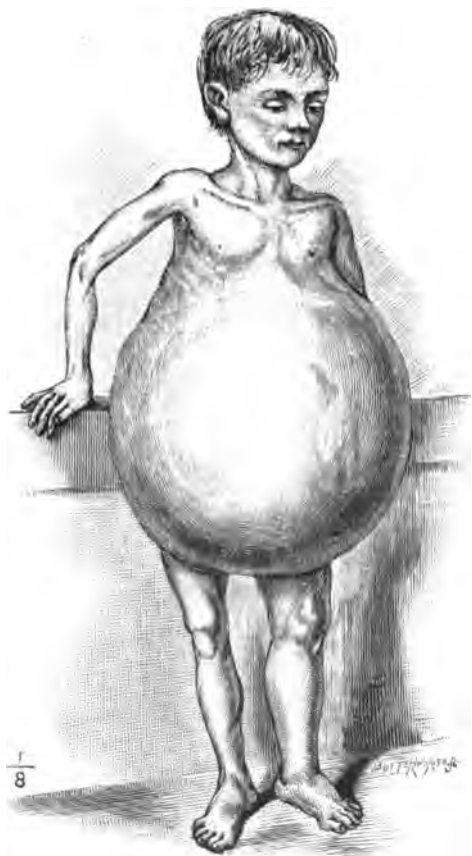
Fig. 3.—A boy aged eight years with a renal sarcoma which weighed 31 pounds.

in this view, but a more extended inquiry leads me to accept it. This is a matter worth consideration, because a study of the fœtal kidney demonstrates very clearly that the renal sarcomata of infancy arise in the connective tissue of the renal sinus. The epithelial cylinders are due to the entanglement of uriniferous tubules, in consequence of the sarcoma invading the cortex, whilst the striated spindles are derived from the muscle-tissue of the renal pelvis, which is an expansion of the hollow muscle known as the ureter.

Thus the doctrine of tissue prototypes is abundantly exemplified and satisfied by the normal tissues, without any need of invoking assistance from misplaced segments of adjacent mesoblastic somites, a theoretical mode of origin which never commended itself to my mind. These studies demonstrate in no uncertain way that these so-called renal sarcomata of infancy are extrinsic in origin, and strictly non-renal. This view is now held by all who have carefully looked into the matter, and it is worth mention that, in 1857, Van der Byl exhibited at the Pathological Society, London, a large renal tumour, from a boy aged eight years, which measured 82.5 cm. (33 inches), and weighed 31 lbs., and, in the description of the specimen in the catalogue of the Middlesex Hospital Museum, it is definitely stated that the growth appears to have sprung from the concavity of the kidney, and a narrow band of renal tissue can be traced round a great part of the circumference of the kidney. The general appearance of this boy in such dreadful circumstances is shown in Fig. 3. It is characteristic of these sarcomata that the ureter is rarely obstructed; this is clearly shown in Fig. 1, and, in the clinical history of the boy depicted in Fig. 3, it is said, even in relation with this large mass, that the ureter was normal, and yielded some clear urine. This extraordinary freedom of the ureter from invasion, explains the rarity of hæmaturia in these cases. This, perhaps, explains what is otherwise remarkable, the painlessness of these tumours in children, for there is no pressure from accumulated urine. Certainly a child with a very large renal sarcoma has been absolutely free from pain, and had been amusing himself with his playmates in the gardens three days before he died. Indeed, many mothers, when the gravity of a renal tumour of this kind is explained to them, will express their astonishment that a child, apparently in excellent health and spirits, could be in such serious straits as the surgeon would have them believe.

Though the ureter so constantly escapes invasion, yet the veins are always implicated, and this constitutes one of the most peculiar, as well as dangerous features of renal sarcomata in

children. The tumour tissue extends into the renal vein, and often projects into, and even runs for a long distance into, the inferior vena cava, portions are detached, and carried to the pulmonary circulation, and are arrested in the capillaries of the lung, and originate secondary deposits. The intra-venous apex of such an outrunner is usually cone-shaped and smooth. Occasionally a large fragment is detached, and this has been known to block the right auricolo-ventricular orifice (Osler). Such a gross embolus is uncommon. Plugging of the vena cavity by an outrunner is by no means rare, and gives rise to œdema of the lower limbs. In a case under my own care the inferior vena cava was completely obstructed from its origin to its termination by a sarcomatous extension of this kind.

It is a singular and well-established fact that when certain paired viscera, such as the kidneys, ovaries, eyeballs, and crura cerebri, are in early life attacked by sarcomata, in a very large proportion of cases, perhaps half the number, the disease is bilateral. In relation to this matter, Abbe recorded a very important observation. He successfully extirpated a kidney for sarcoma in a child of one year and two months. Four and a half years later his little patient again came under his care with a sarcoma in the remaining kidney. This is, I believe, the only example at present on record, but this is not surprising when we reflect how few children survive this operation.

This leads me to the consideration of the results of treatment. In 1893 I collected and tabulated in my book on ' Tumours ' twenty-one complete records of renal sarcoma in infancy, which had been submitted to nephrectomy. In this list of twenty-one cases, twelve patients died as a result of the operation, of those which recovered all died of recurrence within a year. Since the publication of that table a large amount of interest has been aroused in the question of the results of nephrectomy for sarcoma, and it is now an easy matter to collect a hundred records. The analysis of a large number of these reports shows that nephrectomy for renal sarcomata in infants under six years has a mortality of over 50 per cent. Of the fifty that recover, forty-five die from recurrence at periods varying from two months to a year. In the remaining five, life may be prolonged, as shown in the subjoined table:—

Table 1.—Renal Sarcomata in Infants.

Table of Cases in which Life was prolonged beyond one year by nephrectomy.

Reporter.	Age.	Results.
Hicquet.	6.	Died 1½ years after operation. ' Acad. roy. de Méd. de Belgique,' Jan. 28, 1882.
Schmidt.	6 months.	Alive and well three years later. Dr. Emily Lewi. ' Arch. of Pedriatics,' vol. xiii, p. 97.
Abbe.	2½ years.	Alive and well five years later. ' Annals of Surgery,' 1894.
Abbe.	1 yr. 2 mths.	Patient died 4½ years later from sarcoma in remaining kidney. ' Annals of Surgery,' 1894 and 1897.
Malcolm.	1¾ years.	Alive and well 6½ years later. ·Trans. Clin. Soc.,' vol. xxvii, p. 94, and private letter.

It is very certain that a child with a renal sarcoma runs an enormous risk of losing its life when submitted to nephrectomy, and, at the same time,

Fig. 4.—A kidney in section with a sarcoma invading its cortex. From a man 51 years of age (No. 1 in Table 2). (Museum of the Middlesex Hospital.)

the chances of prolonging life are more slender than in any other surgical operation. At the same

time, it must be borne in mind that the disease is surely fatal within a very limited period when allowed to run its own course.

Sarcomata of adults.—These differ in many important particulars from the sarcomata of infancy. In the first place, a sarcoma in the adult arises in the cortex, usually in connection with the capsule, and then gradually invades the true tissue of the kidney. This relation of renal sarcoma to the capsule is of some importance, because similar the renal sinus. This is a subject of some interest, because a critical comparison of the mode of origin of sarcomata in viscera similar to the kidney, e. g. the spleen, thyroid gland, and prostate, shows that such tumours are not only uncommon, but are often closely connected with the connective tissue investments of such organs.

Rare as a sarcomata of the adult kidney is, and especially if we exclude the clearly perirenal forms, we find that they occur much more fre-

Fig. 5.—A kidney with tumour in section. The tumour presents the microscopic characters of the zona fasciculata of the adrenal. Removed from a woman 58, in May, 1897. She was alive and well in April, 1899 (No. 8 in Table 2).

tumours arise in the connective tissue in which the kidney is embedded, they are then perirenal sarcomata; and, as far as my observations go, this is a more frequent position for them, than those which we term renal sarcomata. A careful comparison of these tumours leads me to believe that, in the adult, sarcomata of the type represented in Fig. 4 have their origin in the renal capsule, whereas, in the sarcoma of infancy, they arise, as already pointed out, in the connective tissue of quently than in the liver, the spleen, or the prostate, even when we take into consideration the fact that the kidney has a double liability from the circumstance that it is a paired organ.

The whole question has assumed a new aspect since Grawitz showed that many renal sarcomata occurring in adults exhibited, on microscopic examination, the structure of the zona fasciculata of the adrenal. This view has excited wide interest, and, whether true or not, it has led to a keen in-

vestigation of the microscopic structure of the malignant tumours of the adult kidney.

It has long been known that accessory adrenals are found beneath the capsule of the kidney, as well as on the under surface of the liver; they are also found in the retroperitoneal tissue in the course of the spermatic artery, and, strangest of all, on the anterior layer of the mesometrium near the ovary. In the last-mentioned situation these adrenal "rests" have only been met with in the foetus near, or at, full time. It is extraordinary

been further justified by the fact that some of these adrenal tumours, as well as those which arise beneath the renal capsule of the kidney, and exhibit the adrenal structure, disseminate and mimic the extraordinary phenomenon known as "general thyroidal malignancy," in which tumours, exhibiting all the microscopic features of thyroid gland, appear in the bones, especially the skull, vertebræ, and femur, as well as in the viscera, in association with what appears to be a simple adenoma of the thyroid gland.
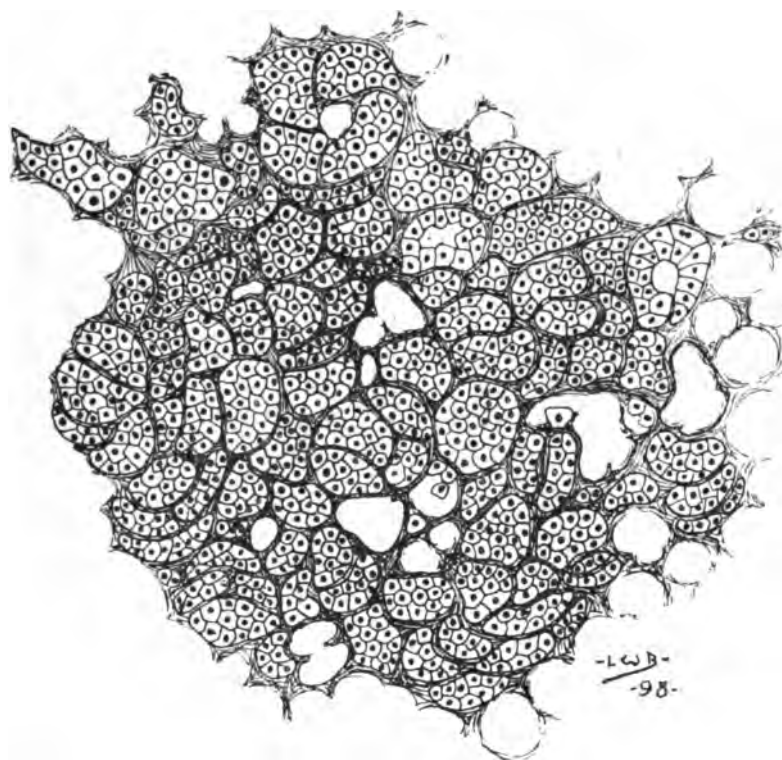
Fig. 6.—Microscopic characters of the tumour in Fig. 5.

that "adrenal rests" should occur in so many situations, yet tumours exhibiting this peculiar structure should only arise in two situations, namely, in the main adrenal and beneath the capsule of the kidney.

It has long been known that the adrenal may be transformed into a large tumour in the same way that a thyroid gland becomes a goitre, and the analogy is so striking that Virchow years ago proposed for these adrenal tumours the term, "struma supra-renalis." In recent years this analogy has

It is a point worth consideration in relation to the theory that many renal sarcomata arise in adrenal "rests," that they only occur late in life. This is quite contrary to what occurs with other tumours, which probably originate in "rests," for example, sequestration dermoids, for these are essentially tumours of early life.

Whatever view may be taken of the tissue in which these tumours arise, it is quite certain that they exhibit peculiarities of structure which distinguish them from the

ordinary round and spindle-celled species of sarcomata (Fig. 6). That they are malignant is equally beyond question, for they not only recur after removal, but give rise to secondary nodules, especially in the lungs, these nodules exhibiting the characteristic features of adrenal tumours. The frequency with which the lungs are implicated is due to the tumour invading the renal vein or its branches.

Though these tumours are very vascular, and their central parts are often destroyed by extravasations of blood, they do not give rise to hæmaturia, because the tumour does not invade the renal pelvis. This is the most striking fact in their clinical history.

Carcinoma.—On several occasions I have ventured to draw attention to the fact that we possessed very little reliable data in regard to carcinoma of the kidney, using this term in the sense of a malignant tumour of epithelial origin. At that time I was sure, from the study of a few carefully-recorded cases, as well as from some observations of my own, that such a condition did arise in the kidney, and that its starting-point was the epithelium of the uriniferous tubules.

Material to assist me in this inquiry has not been abundant since that date, but I am satisfied that malignant tumours of epithelial origin do arise in the kidney, and certainly present gross and minute characters which separate them very definitely from the other forms of malignant tumours.

On the few reliable clinical data available, it seems that renal carcinoma is uncommon before middle life, and it increases in frequency after fifty. The relation of the disease to the kidney is well shown in Fig. 7, and consists of a gradual transformation of the renal tissue, without violent distortion of the shape of the gland. The carcinomatous tissue creeps into the pelvis of the kidney, and invades the ureter, sometimes extending the whole length of this duct, and the outrunner has been observed to enter the bladder. This relation of carcinoma to the ureter explains the frequency. of hæmaturia as a concomitant of this disease. It is also instructive that a renal carcinoma does not form such a huge mass as is so often formed in sarcoma of this gland, and it is unilateral. Of the liability to dissemination, nothing can as yet be written with certainty: at present I regard se-

condary deposits as unusual, because the disease is rapidly fatal from the persistent hæmaturia, which is such a striking feature of these cases.

The minute characters of renal carcinoma are very striking, and consists of tubules lined with regularly-arranged columnar epithelium, and the general arrangement of these tubules in microscopic sections presents "a rough but striking resemblance to the tubular structure of the kidney" (Sharkey).

Fig. 7.—A carcinomatous kidney in section. From a man of 54 years (No. 7 in Table 2).

In describing renal sarcomata it was mentioned how frequently they attack both kidneys in infants, yet, in the adult, my reading and inquiry have not helped me to find an example of bilateral renal sarcoma. This is equally true of renal carcinoma, and in order to emphasise the unilateral character of this disease, it is worth drawing attention to a rare specimen happily preserved in the Museum of the Royal College of Surgeons. It is a horse-shoe kidney, in which one half is attacked by carcinoma (Fig. 9). The patient, a woman sixty

years of age, was under the care of Mr. Pearce Gould in the Middlesex Hospital. He attempted to remove the tumour, but in the course of the operation the compound nature of the kidney was realised, and the operation abandoned. The patient, however, died of shock.

Patients who are the subject of malignant disease, especially when advanced in life, bear surgical procedures very badly, and this is especially the case with the kidney.

In order to afford some notion of the risks patients incur when they submit to operation, the very small chance of receiving permanent benefit is represented in the table on page 74. It

very many, outrunners from the tumour so invade the veins that complete removal is impossible. In others, interference with the tumour produces " cancerous infection " of the local tissues, and explains the enormous local recurrences which so often and so quickly ensue upon the most careful and thorough nephrectomy.

The results of surgical treatment of malignant disease of the kidney are as dismal in the adult as in children. The operation mortality, even with the excellent resources of modern surgery, is very high. I estimate the death as at least 50 per cent. from published records, and of those who recover more than half die within six months from recur-
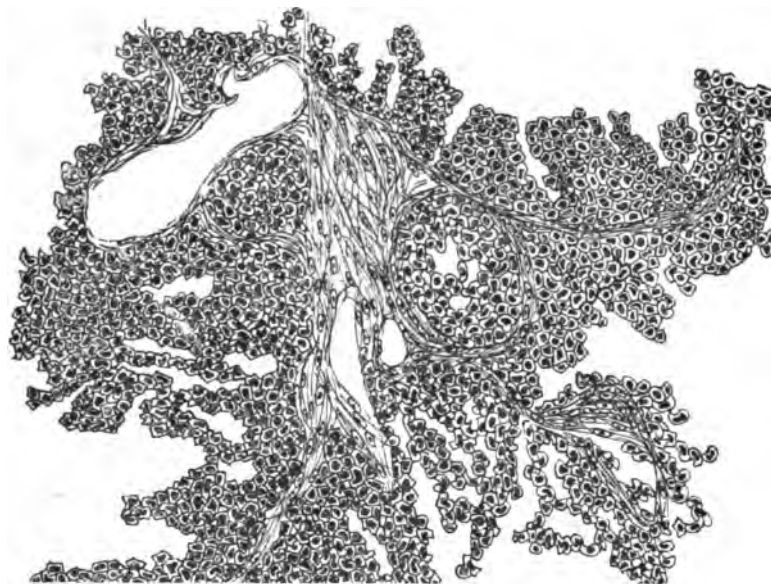
Fig. 8.—The microscopic characters of renal carcinoma.

is composed of cases in which I had excellent opportunities of becoming acquainted with the clinical facts, as I performed three of the operations myself, and either witnessed or assisted at the others, and in all of them examined the microscopic sections.

Further, I have tested the results by a large series of reports gathered from the most varied sources in the literature of Great Britain, America, and Germany. The results are about the same as those shown in the table.

I come regretfully to the conclusion that operation shortens rather than prolongs life, even in those cases which recover from the operation. In

rence, and nearly all the remainder within the year. It was with the hope of determining, from a careful investigation of the histology of renal tumours, the nature of the tumours in those very few cases in which life is prolonged beyond a year, which led me to make the inquiry which constitutes the subject of this paper. At present I believe the least malignant is the adrenal type. In this Journal, October 6th, 1897, I reported the clinical facts relating to the kidney represented in Fig. 5 of this communication. The tumour was removed in May, 1897, and the patient is alive and in health at this date (April, 1899).

Ris reported a case in which Kronlein, of Zurich,

removed a kidney from a woman, fifty-six years of age, for a tumour which Klebs described as an

parallel with those of Abbe and Malcolm, mentioned in Table 1.
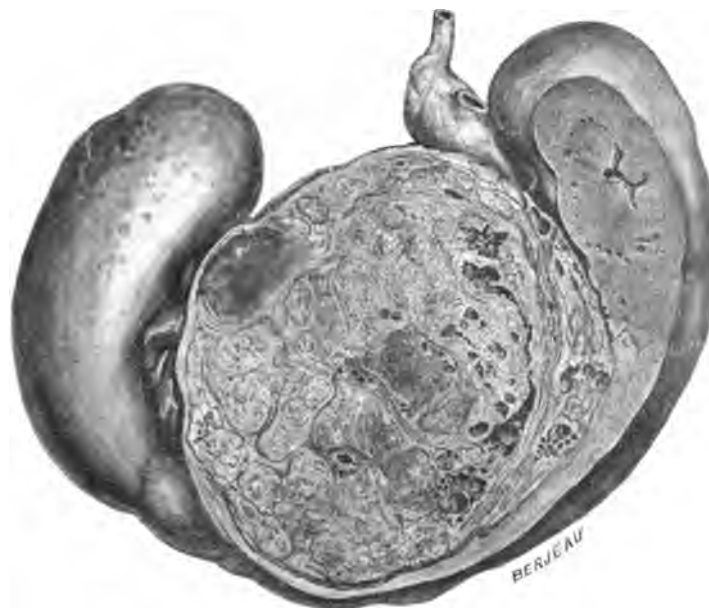
Fig. 9.—A horse-shoe kidney : one half of the organ is attacked by carcinoma.
(Museum, Royal College of Surgeons.)

adeno-sarcoma. Five years later the patient was alive and well. These two cases are somewhat

Surely these facts should serve as a very serious object lesson ; it is also disquieting to reflect that,

Table 2.—Operations for Renal Sarcoma and Carcinoma in Adults.

No.	Reporter.	Age and Sex.		Result of Operation and Nature of Tumour.	Reference.
1	Morris ...	51 M.	D.	Sarcoma	'Brit. Med. Journ.,' 1893, vol. 1-2.
2	,, ...	70 F.	D.	,, ...	,, ,, ,,
3	,, ...	55 M.	...	Carcinoma. Recovery and death in three months	,, ,, ,,
4	,, ...	37 F.	...	Sarcoma. Recovery and death in three months	,, ,, ,,
5	... ...	43 M.	...	Adrenal Tumour. Recovery and death in a few months	'Museum Catalogue, R.C.S.,' 3584 F.
6	... ...	54 M.	...	Sarcoma. Recovery and death in a few months.	
7	Author ...	54 M.	D.	Carcinoma	Figs. 7 and 8.
8	,, ...	58 F.	...	Adrenal Tumour. Alive and well two years later	Fig. 5, 'Clinical Journal,' vol. x, Oct. 1897, p. 373.
9	,, ...	28 F.	...	Carcinoma. Recovery and death in a year	Unpublished.
10	Pearce Gould...	60 F.	D.	Carcinoma	'Museum Catalogue, R.C.S.,' 3584 K, Fig. 9.
11	,. ,, ...	55 F.	D.	Sarcoma	'Middlesex Hospital Reports,' 1893, p. 187.
12	Macnaughton Jones ...	40 F.	...	Carcinoma. Recovery and death in one year	'Journ. Brit. Gyn. Soc.,' vol. xiii, p. 176.

even with the most elaborate methods of histo-logical chemistry, we are unable to predict, from a most careful examination of the minute structure of a malignant renal tumour, the probable date of recurrence.

Surgical methods of dealing with malignant disease in any part of the body are very crude, inasmuch as they merely consist of "cutting it out" when it is in an accessible situation, and appears to be localised. At present we have no facts to indicate, in dealing with malignant tumours of the kidney, which should be interfered with, and which should be allowed to run their course. Certainly the plan now pursued of cutting them out indiscriminately will not tend to maintain the credit of visceral surgery.

What is still needed, in so far as malignant tumours in adults are concerned, is a collection of complete cases, that is, an accurate clinical history, preservation of the tumour, with a description of the microscopic characters, and the mode of termination of the case, with a description of the post-mortem examination. This will enable surgeons to decide whether it is worth while to practise nephrectomy for sarcoma and carcinoma.

A Case of Dermoid Cyst of the Anterior Mediastinum.

—Dr. N. Bergmann ('Centbl. f. Chir.,' Aug., 1898). A woodman, thirty-eight years of age, had a swelling of the breast-bone following influenza and typhoid fever. The author found on examination a doughy swelling with bluish discolouration of the skin, and a fistula the size of a pea. Diagnosis of caries sterni was made, and an operation was performed, when it was discovered that there was a dermoid cyst of the anterior mediastinum the size of a goose-egg. Its contents proved to be soft mush, lanugo-like hair, and four teeth. For a few days after the operation the patient coughed up bloody material mixed with the same cheesy mush found in the cyst, showing that a communication must have existed between the cyst and the lung. Subsequent healing was uninterrupted.—*The Post-Graduate*, April, 1899.

A CLINICAL LECTURE

ON THE

GENERAL TREATMENT OF INTESTINAL OBSTRUCTION.

Delivered at the Westminster Hospital,

By CHARLES STONHAM, F.R.C.S.,

Surgeon to, Lecturer on Surgery and Teacher of Operative Surgery at, the Hospital.

GENTLEMEN,—As I spoke last week on the general diagnosis of intestinal obstruction, I propose to devote the few minutes which remain to-day to a consideration of its general treatment.

While it is perfectly true that, at any rate, in cases of acute intestinal obstruction, there is practically only one line of treatment that any surgeon would ever follow, viz., operation, yet, at the same time, in cases of subacute, and especially in cases of chronic, intestinal obstruction, there are certain general measures which may be adopted for the benefit of the patient, quite apart from any operation which may subsequently prove to be necessary.

The first point in the general treatment is to put your patient in as comfortable a position as possible, and the most comfortable position is that which he voluntarily assumes; in most cases he should be on his back, with a small pillow underneath the thighs, so that the tension of his abdominal muscles is relieved.

With regard to drugs, you should remember that there is practically only one drug that you should ever allow a patient with intestinal obstruction to have, and that is opium. You may give opium in doses of a grain or more every third or fourth hour, according to the severity of the symptoms the age of the patient, and his tolerance of the drug. You will find that a patient with chronic intestinal obstruction will take large doses. Now, there is one thing which you must be warned against, and that is that opium tends to diminish all the patient's symptoms, and it is not uncommon for the friends to say, when you see the patient again, that he is very much better, and they are sure he is going to get well. You must expect that, and you must not let it put you off your guard. You will find that the first obvious

result will be the relief of the pain. Now, the patient measures the severity of his illness by his pain; his attendants estimate it, to a great extent, by the amount of shock that he shows; and, as the shock is greatly dependent upon the amount of pain, if you relieve the one you relieve the other. Under opium you will find that the shock passes off, and that the temperature approaches nearer to normal than before, that the tongue cleans to a considerable extent, and becomes moist, and that the patient perhaps sleeps. The reason I warn you against attaching too much importance to this improvement is that, if the case is one that requires operation, you must not hold your hand because the opium has done him good; if you do you run the risk of losing the case; the only sure signs of recovery is the passage of flatus or an action of the bowels. With regard to other drugs, I need only mention purges to condemn them. A purge never can do any good except in cases of intestinal obstruction due to fæcal accumulation; in all other cases a purge does nothing but harm. It will probably increase the vomiting, it will certainly increase the peristaltic action, and by that means it will cause an increase of pain, and deepen the shock and prostration. It will also cause an increase of congestion of intestine above the point of obstruction, and will bring about or hasten the onset of acute peritonitis; if the bowel above the obstruction be weak and much distended, and especially if it be ulcerated, a purge may occasion rupture.

You know how common it is for us to see cases sent into the hospital which have been given large and often repeated doses of some powerful purgative, such as castor oil. Such cases are the very worst which you will be called upon to operate on. Among the drugs which it has been suggested should be given to these patients is metallic mercury in large quantities, with the object of overcoming the obstruction. For my own part, I cannot see on what possible grounds metallic mercury can be supposed to do any good whatever; large enemata of water, if retained long enough, would answer the purpose quite as well, and even these are but little used, and may, as in the case of intussusception, lead to deceptive results.

A very important matter is the feeding of the patient. In cases of chronic and subacute ob-

struction, where the symptoms do not point to the necessity for immediate operation, where, in fact, there is some hope that the obstruction may be overcome without operation, the feeding of the patient is the most important consideration. It is useless to try and feed the subject of intestinal obstruction by the mouth. In the first place, the probability is that directly you give him food by the stomach he will vomit, and that will increase the peristaltic action, and make his general condition of shock much worse. But even supposing that he can keep his food down, in most cases the condition of the digestive tract above the seat of obstruction renders it totally incapable of digesting it, or, even if the necessary chemical changes occur, the mucous membrane will probably be incapable of absorbing the products. Therefore, the mere fact that the patient keeps his food down, does not show that he is benefiting by it. It is perfectly true that there are some cases where feeding by the mouth is good, in fact, where it is not only good but necessary, for example, in cases of obstruction low down in the colon. The ill effects of obstruction in the colon generally do not extend much beyond the ileo-cæcal valve, and in such cases the digestion in the stomach and in the small intestine can go on practically unimpaired, provided you feed your patient carefully, and give him small quantities at a time. Moreover, if the obstruction is low down in the colon, such as a large intussusception, or volvulus, or cancer of the sigmoid flexure, the patient will not tolerate enemata, and he will not absorb them, even if he does not return them, and you are therefore driven to feeding by the stomach, which he bears perfectly well.

With regard to the method of feeding patients by enemata in cases of intestinal obstruction, it is best to administer peptonised foods—peptonised milk and beef tea, or peptonised meat suppositories and similar things, at intervals of, say, about two hours. You may find that the mere fact of giving him an enema aggravates the symptoms; indeed, sometimes a mere rectal examination will increase vomiting and pain, and set up violent peristaltic action. It if does so, you are driven to feeding by the mouth. If rectal feeding has to go on for long, it is a very good plan to wash out the rectum with an enema of warm water every day; by that means you free the intestine of a

quantity of unabsorbed material, and pave the way for better absorption of the food which has to be given in the future.

You will find that one thing which the subjects of intestinal obstruction complain of very bitterly is thirst. You can relieve thirst to a certain extent by ice. Ice is always permitted by the mouth: it never appears to do any harm in acute cases, and sometimes it does considerable good. But the best way to relieve thirst is by enemata of hot water, half a pint to a pint may be safely used as often as necessary.

The diet in the case of a man who is suffering from chronic intestinal obstruction, e. g. stricture, must have regard especially to the fact that any indigestible material in his intestine may at any time excite an acute attack by blocking the narrow orifice. Therefore his food has to be most carefully regulated. He should take food frequently, but in small quantities; it must be easily digestible, such as pounded fish, chicken jelly, and material of that kind, which leaves little solid residue, so that nothing is likely to accumulate which could block up the opening in a stricture.

The use of enemata.—Apart from their use in feeding the patient, it is a rule in cases of acute intestinal obstruction, and, of course, in subacute and chronic cases, to give the patient an enema to empty the bowel. This not only tends to afford relief, but is occasionally useful for diagnostic, and sometimes for curative, purposes. For example, in the case of volvulus in the sigmoid flexure, an enema is of diagnostic value because of the small quantity of water you can throw into the rectum. In cases of intussusception, large enemata (so-called forced enemata) of water are used by some surgeons to attempt reduction. Under such circumstances the enema must be administered with considerable force, and the pressure of the column of fluid must be maintained from ten to twenty minutes; it is no good simply injecting the fluid, and then letting it out again immediately. By that means it is possible that an early intussusception may be reduced. If an enema aggravates the symptoms of intestinal obstruction it should not be repeated.

With regard to the composition of the enema, soap and water is the best, to which may be added a little turpentine; or, if there is evidence that there are large masses of fæcal accumulation in the rectum or in the lower part of the colon, you may very advantageously mix a little warm olive oil or castor oil with the water. The best way of giving an enema is by gravity only; let the fluid go in of its own free will; you can regulate the force of entry by raising the vessel containing the water. Of course, in the case of a forced enemata, when a certain amount of pressure is needed, the ordinary syringe must be employed.

Insufflation.—Insufflation of the bowels has been strongly recommended in cases of intussusception, and has been practised by some in cases of volvulus. It is difficult to see how the insufflation of air can be in any way more beneficial than the distension of the bowel by water, and I think that very few people now use it. I have occasionally used it myself in attempts at reduction of intussusceptions; but I have not met with any success from this method, and I do not propose to resort to it again.

It has been suggested that cases of intestinal obstruction should be submitted to massage of the abdomen, and even inversion of the patient has been recommended. My own view of massage, as regards the treatment of intestinal obstruction, is that it can very rarely do good, and may often do a great deal of harm. In the first place, it is very often exceedingly difficult to state what is the cause of the obstruction, and in the second, even if you can come to a definite conclusion on this point, it is very difficult indeed to determine the seat of the obstruction. Now, unless you can absolutely satisfy your mind on those two points, any manipulation of the abdomen is a measure which you can only carry out empirically. It is manifest that in order to get, say, a certain amount of fæces or something else past an obstruction, which might be produced by a growth such as cancer, you have first to know where it is, and next what is the condition of the gut above it. It would be quite possible that in an attempt at massage in a case of chronic obstruction due to a growth, you might rupture a distended and weakened bowel above it, and, therefore, I believe the practice to be totally wrong. I believe there are only two conditions that ever warrant massage of the abdomen in obstruction. One is obstruction due to fæcal accumulation; in such cases un-

doubtedly massage is a very important means of passing on the material, and I think I might safely say the same with regard to the impaction of foreign bodies in the gut, which really amounts to very much the same thing. The other condition in which massage of the abdomen may be beneficial is a very early intussusception; but, remember, it must be a very early case, say one which is recognised within twelve to fifteen hours of the onset. I have seen two cases, at any rate, in which the symptoms of intussusception were undoubted, and in which there could be no doubt whatever that that was the condition present. Both of them were reduced under an anæsthetic by kneading the tumour. At the same time, in such cases you have the great advantage of knowing precisely the anatomy of the parts, and hence can employ definite movements likely to unravel the gut. The great objection to treating by massage or kneading cases of intussusception which have lasted more than about fifteen hours is, that you do not then know the condition of the bowel, and you might possibly tear the gut if it be approaching a gangrenous condition.

Tracheocele.—J. Park West ('Archives,' April, 1899) reports the following case: A child, twenty months old, who has always been healthy and whose parents are healthy, when fifteen months old was noticed to have a swelling one-fourth inch in diameter a little to the left and just below the level of the larynx. At the time it was first noticed it would occasionally disappear; later it would disappear only on deep inspiration, but now it never completely disappears. It has grown rapidly for the last two months, and is now as large as a hen's egg on the left anterior neck, just above the clavicle, well separated from the larynx and trachea. It feels soft, but becomes hard and tense when the child cries. Continuous pressure will cause it to disappear, and then a thin, smooth membrane one-eighth of an inch thick can be felt. On prolonged expiration, as in crying, it is very much increased in size, and two more swellings connected with it appear. The opening in the trachea can be felt. Very few authentic cases have been reported. The author has found fifteen cases only recorded. —*Canadian Practitioner*, May, 1899.

OSSICULECTOMY.*

By MACLEOD YEARSLEY, F.R.C.S.,

Senior Assistant Surgeon to the Royal Ear Hospital; Surgeon in charge of Department for Diseases of the Throat, Nose and Ear, the Farringdon General Dispensary; Surgeon for Diseases of the Throat and Ear, the Governesses' Home.

THE operation of ossiculectomy—by which is meant the removal of the ossicles—is one of the numerous improvements which have been introduced into the surgery of the ear during the past few years. It is one which has gained for itself a firm footing as a surgical procedure, and has widened the otologist's scope in a very great degree.

It is with the indications, scope, and technique of this operation that I propose to deal this evening.

The *indications* for the removal of ossicles fall under two main headings:—

1. The removal of the cause of a chronic discharge.

2. For the improvement of defective hearing after a discharge has ceased.

Taking the former, it is almost unnecessary to point out that ordinary means of dealing with the discharge must be taken first, such as packing, syringing, curettement, &c.; or that, should symptoms of mastoid disease be present, a radical mastoid operation should be undertaken, the treatment of the ossicles becoming a part thereof.

It is with the numerous group of cases which lie between those amenable to ordinary treatment and those requiring opening of the mastoid antrum that we have to deal. These require discussion according to the position of the perforation in the *membrana tympani*. Let us take first, *perforations in Shrapnell's membrane*. When persistent discharge is associated with a perforation in Shrapnell's membrane, chronic attic trouble is indicated. Since this part of the tympanum is just below the middle cranial fossa, and opens behind into the autrum, chronic suppuration therein is of grave importance as a continual danger to life. The chief cause of persistent attic disease is caries of the head of the malleus, the body of

* Read before the South-West London Medical Society, April 12th, 1899.

the incus, or both, often with caries of the attic wall. Since the outer bony wall of the cavity bars the proper outlet of pus, the removal of the remains of the drum and ossicles with, in some cases, the outer attic wall, is a common-sense surgical treatment. By it not only is proper drainage afforded, with a means of easier access to the attic for further treatment, but the hearing power is improved, because caries of any part of the ossicular chain acts as an obstruction to the proper conduction of the sound waves.

In a man, aged twenty-one, who had suffered from a discharge from the right ear for four years, and in whom there was a perforation in Shrapnell's membrane, with two granulations protruding through it, ossiculectomy was performed. The ossicles showed advanced caries of the malleolar head and of the incus, only the long process of the latter remaining. The result was excellent, all discharge ceasing in four days, and the hearing power being improved.

We now pass to perforations in the *superior posterior quadrant*. In these cases persistent discharge is usually associated with caries of the incus, commencing in the descending process (which articulates with the head of the stapes), by which the attic may become secondarily affected by extension. Ossiculectomy frequently gives a very excellent result in these cases, since, as a matter of fact, by performing that operation one is simply carrying out the great surgical principle of removing the cause.

Perforation in some other part of the membrane does not often call for ossiculectomy. . In anterior-inferior perforations there is often loss by caries of the tip of the handle of the malleus, which does not call for treatment out of the ordinary. When, however, there is almost total destruction of the membrane, with caries of the malleus and incus or of the remains of those bones, the operation is often required before any diminution of the suppuration can be brought about by other treatment.

I now pass to the second heading, namely, *the improvement of hearing after a discharge has ceased*. The operation is contra-indicated if the bone conduction for the tuning-fork is not good, *i. e.* if there is any implication of the internal ear. It is—providing the bone conduction is good—when there are adhesions binding down the ossicles that the operation is most useful. In one

case, in which the handle of the malleus was adherent to the promontory, the result of an ossiculectomy was that the hearing power for the watch improved from " contact " to " six inches."

Again, in a lady, aged forty-six, who sought treatment more for the incessant tinnitus she suffered from than for the deafness, ossiculectomy ultimately gave relief after all other methods of treatment had failed.

The object in this group of cases is to remove the remains of the membrane together with the malleus and incus, and so expose the head of the stapes that the sound waves strikes directly upon it. If improvement does not result, it is due to the presence of deeper adhesions implicating the stapes, a condition which one may attempt to relieve by mobilisation of that bone.

The *operation* requires, of course, to be done under perfect antiseptic precautions. A short time before it is performed the ear should be well syringed with 1 in 40 carbolic, and plugged with antiseptic gauze wrung out in a similar solution. The folds of the auricular cartilage must be well purified, and a pad of gauze placed over it, and secured by a bandage. When the patient is anæsthetised, the meatus is swabbed out with Lister's strong mixture.* The operation is performed through a speculum, under a good, reflected light. A special form of knife is introduced in front of and behind the short process of the malleus, the anterior and posterior ligaments divided, and the remains of the membrane cut through at its circumference. Sexton's pincette is then introduced, and the malleus seized and pulled a little downwards, and then extracted. The incus is more difficult of removal. When extensively carious it sometimes comes away with the malleus. At other times it may be extracted with an incus-hook, or by means of Lake's attic curette. Hæmorrhage should be controlled by packing with small sponges, or by hydrogen peroxide ; the method I find most effective is to pack the meatus with small sponges, leaving them *in situ* for a minute, and then extracting them. The meatus is afterwards syringed with 1 in 40 carbolic, and packed with wet, antiseptic gauze ; a pad of similar material, covered by antiseptic

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* A solution of 1 in 25 carbolic with $\frac{1}{500}$th part of perchloride of mercury added.

wool, is then placed over the ear, and secured by a bandage.

[The paper was illustrated by water-colour drawings, specimens, and instruments.]

Treatment of Insomnia.—A new method of inducing sleep, personally tested by J. B. Learned ('Med. and Surg. Reporter'), is to cause muscular fatigue by exercises carried out in bed. Lying on his back, the patient first reaches for the foot and head board at the same time. He then raises his head half an inch, at the same time he breathes slowly and deeply about eight inspirations to the minute, which are counted. After about twenty inspirations, the head, which begins to feel heavy, is dropped. The right foot is then raised (the reaching for the boards and counting being continued), but similarly dropped when fatigued. The left foot goes through the same process. The muscles which are used in reaching for the head and foot boards are then relieved, and the body is elevated so that it rests on the head and heels. He then turns on the right side and reaches for the head-boards and foot-boards again, and raises first the head and then the foot as before. The same process is gone through on the other side. If sleep has not been induced, the same cycle is gone over again.

The use of hypnotics in insomnia is simply the use of symptom remedies: insomnia is a symptom, not a cause of disease, nor a disease. The use of hypnotics, therefore, according to a writer ('Post-Graduate,' May, 1898), should be temporary, while the under-lying cause of the insomnia is being removed or palliated. Before employing hypnotics, other measures should be tried. One of the best is a bath at 104° F. for five minutes. The general cutaneous vascular dilatation, increased by rubbing with a coarse towel, is frequently followed by a good night's rest. Warm liquid food, as a glass of milk or a bowl of soup, will often give satisfactory results. In debilitated persons a glass of stout or whisky in hot water may work wonders. Sometimes stimulation of the emunctories, as by sodium sulphate, given in hot water taken at night, will be followed by sleep, particularly in gouty subjects. Methods which relieve pain—position, topical applications—are hypnotic. Chloralmid, pellotine, paraldehyde, and trional are the safest hypnotics.

Robert T. Edes ('Journ. Amer. Med. Assoc.') believes that a normal and sufficient general nutrition is to be looked for as the basis for normal cerebral nutrition. A useful criterion is the body-weight in reference to the height and usual or normal condition of the person, and

diet is to be regulated upon this basis. Secondly, the distribution of the blood is to be equalised, with the balance, however, tending to anæmia of the brain rather than the reverse, though by no means to an extreme. The derivation of blood may be accomplished by hot baths of the feet or of the lower half, or even the whole body, emphasised, if necessary, by a little mustard. A small amount of easily digestible food just on going to bed, or on waking up in the course of the night, probably acts in the same way. A hot toddy adds to a slight direct narcotic effect the early vasomotor dilating action of alcohol. It is well to promote the circulation in cold feet by a hot bath for five minutes, followed by a short, cold douche and friction, rather than simply to attempt to warm them by hot bottles.—*Monthly Cyclopædia*, April, 1899.

Athetosis and Tænia Saginata. — Rudel ('Deutsche medic. Wochenschr.,' 1898, xxiv, 479). A girl, thirteen years of age, from a well-to-do family, having no hereditary taint, presented a very pale colour of the face, with a scrofolous habit, complained of lassitude, a tired feeling, anorexia, and disinclination for work since several months; during the last few weeks jactitations accompanied by spasms made their appearance. The patient, up to the present time, had never suffered from these symptoms. The spasms and jactitations made their appearance in the extremities, especially in the hands and feet; unilateral, either on the right or the left side, appeared at intervals of several days, and were of short duration. At first the fingers were convulsively spread apart and extended, as also the toes; at the same time there were present jactitations of the leg and arm muscles, without any loss of consciousness. These attacks, which bore distinctly the characteristics of the movements of athetosis, only occurred during the day. An invigorating diet and treatment did not improve the patient. Castor oil was then ordered; the movement contained a number of tænia saginata. The latter was then passed altogether after the exhibition of felix mas, after which the patient immediately improved, and all symptoms disappeared and have not returned after three months of observation. The infection could only have occurred a year previously when the girl was on a visit to a relation (a manufacturer of bolognies) where a great deal of raw meat was eaten. This case proves that reflex spasms may very well occur in helminthiasis.—*Pediatrics*, May, 1899.

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EDITED BY L. ELIOT CREASY.

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NOTICE.

SOME GENERAL POINTS IN THE MANAGEMENT OF CASES OF SO-CALLED SIMPLE FRACTURE.

A Lecture delivered in the Course of Practical Surgery
at St. George's Hospital

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AMONG my prescribed duties in the demonstra-
tions on practical surgery is an endeavour to de-
scribe to you the treatment of fractures by splints
or other apparatus. The varieties of these injuries,
their symptoms, and the process of union will be
dealt with by others, and I do not propose to dis-
cuss them. You will find in your future career
that the surgery of general practice is not entirely
confined to the abdominal cavity, or to great and
rare cases. Although I recognise with regret that
anything of so common and practical a nature as
the treatment of fractures does not commend itself
to the minds of some modern students, I think
this subject so difficult, so fraught with import-
ance, bristling with so many " side issues," which
gravely affect the character and professional repu-
tation of medical men, that I must draw your close
attention to it with all the force and earnestness
at my command. Before attempting to illustrate
and describe to you the various splints and appa-
ratus in vogue, and their methods of application,
I wish to make some general remarks, which, how-
ever unusual, may usefully serve as an introduction
to more formal instruction. What I shall say will
help you perhaps little in surgical examinations,
but it will be of material assistance to you in the
far harder examinations so many brilliant prize-
men and scholars fail to pass, the critical, and too
often unjust, examination of the public and your
fellow practitioners.

　Firstly, you have to recognise that fractures
are among the common accidents of life. You
will all have to treat them if you engage in general
practice, especially in rural or manufacturing dis-
tricts. The more remote the district, the more

will these cases be thrust upon your care. Generally speaking, you are not always compelled to operate upon a dubious abdominal tumour, or tie the subclavian artery. But you must treat a broken thigh or leg or arm, perhaps, in a rough district, with poor appliances, with unskilled nursing, in an alcoholic and unruly patient. I can tell you truly that such cases are amongst the most anxious trials of a medical life. When, with many doubts and misgivings, you invest " your all " in a practice or partnership, perhaps your first case will be a bad fracture in some person of local importance. I hope that such will not be your fate. If it so befalls, and you mismanage the case surgically or otherwise, a loss of local reputation will ensue, which, encouraged by unscrupulous rivals, may half ruin you, and years may elapse before you can live it down. A badly-united or non-united fracture, which you have personally attended, is not a pleasant sight to meet constantly limping along the streets of your country town, and such persons, especially if evil and malicious, may serve as evidences of your supposed want of skill for many long years, perhaps for the rest of your life.

The grave risks which medical men run in treating fractures has been forcibly impressed upon me by the proceedings at the Council of the Medical Defence Union. What there occurs has often illustrated to me what a wide difference there is between the surgery useful for examinations and the surgery essential for practice.

It is a matter of surprise and regret to see how little importance students, and especially junior practitioners, pay to the practical study of these common accidents. I know if I were going to " put up " a fracture of the leg in the Oxford ward to-morrow, my audience would be composed only of those whose duties compelled them to be present at so distasteful a task. I know equally well that if I were going to tie the iliac artery, or remove a tumour of which three previous specimens had been recorded, I should have nothing to complain of for lack of audience. It is the same in medicine ; obscure maladies, which usually terminate in pathological investigation and speculative methods of treatment, fascinate the modern student more than the treatment of pneumonia and infantile diarrhœa. All must fly before they can swim. I regret to say that one cannot excuse teachers and

examiners from being altogether free in fostering this hollow and foolish tendency in modern clinical education. It is most detrimental to after success in practice and reputation.

The upshot of these remarks is clear. I entreat you to lose no chance of observing and treating fractures when you have the opportunity. Take notes of one case of fractured thigh, observe his treatment in the hospital, and especially his progress after he leaves it. Communicate with him, and mark his frequent grumbles and discontent. You will by this have learned more of the unpleasant truth about fractures than I could communicate to you in lectures or pages of writing. To many of you the treatment of a fracture ceases when the patient is conveyed to the convalescent hospital at Wimbledon. It is far otherwise in private practice, where you have to see and be responsible for the final results of your treatment. This is one of the many reasons why, after qualification, you should engage in hospital appointments or assistantships before embarking for yourself in practice for which you are really not practically prepared.

The decline of note-taking is lamentable. The bustle and hurry of your lives, the multitudinous examinations, and the crowding out of clinical study by smatterings of science, leaves you no scope for cultivating the process of accurate thought and observation. I stand before you here, and tell you, to the best of my knowledge, how such and such a fracture is to be treated. It is for you to practise constantly the application of splints and bandages. Unless you do this often and persistently, you will never obtain neatness and readiness in the application of apparatus. The splints are constantly " too tight " or " too loose." The strapping or bandage " has slipped a little." " The patient ought to have told me it hurt." All such explanations are often made by those who have not learned to use their hands, and no number of gold medals will excuse you to your patients for clumsiness of manipulation.

I cannot help thinking that it is nearly time the surgery of fractures was re-written. The introduction of the X-rays has worked almost a revolution in their diagnosis, and is a valued aid in their management. The question of operative treatment, especially in compound fractures, receives strong support, and must be taken into

consideration, while the application of massage early, and during the process of union, receives warm recommendation from many able surgeons. Although in the text-books fractures are described as being of certain kinds, and occurring in various situations, all such descriptions are, at the best, but rough guides. The Röntgen rays show us that "simple" fractures are often most serious and complicated injuries, and that the bones are splintered and cracked in all sorts of irregular ways, so that, until the skiagraph is completed, you can hardly tell what has actually happened.

I hope I may hardly remind any of my audience that, when first called to a case of fracture, they should do all in their power to prevent additional suffering. The patient will be pale and terrified, likely enough semi-intoxicated with brandy, and surrounded by an excited crowd of panic-stricken friends and onlookers. Under these circumstances I have known members of our profession to become as "fussy" and foolish as the laity. Your first care must be to keep yourselves absolutely cool, and devoid of anything like flurry or excitement. This bearing will at once give you command of the situation. If you find another medical man in charge, you had better retire, unless he should ask you to assist him. Rely upon it, you do not lose much in the end, if a bad fracture falls into other hands. The clothes should be removed by cutting up the seams, and a temporary splint must be at once applied should the fracture threaten to become compound, or if a long and rough transit has to be undertaken. The movements of the patient must be conducted with all possible care. Any method of transit which necessitates jolting should, if possible, be avoided. When called—remember, some of you certainly will in the future—to a case of fractured thigh upon the hunting-field or racecourse, it is best to lay the sufferer upon a door or gate or hurdle, and have him carried by relays of men, unless the distance to some place of refuge be very great. In the majority of instances a glance at the parts will tell you that the bones are broken, and you need not go through the cruel formality of obtaining "crepitus," a relic of barbarous treatment, from which you learn little or nothing, and which gives the patient an additional torture, which he will never forget, and, perhaps, not forgive.

When I say that the diagnosis of fractures is generally easy, there are plenty of exceptions. A fractured fibula, a cracked rib, may be most difficult to detect, and fractures near joints, as the shoulders, elbow, and hip, are notoriously uncertain, and dubious in the symptoms they display. I may at once say that the accurate diagnosis of such injuries without the aid of the X-rays is too often mere surgical speculation. I have known many cases which prove this. For instance, a patient came to London this spring with an injury to the shoulder. It had been diagnosed as a dislocation. One eminent surgeon pronounced in favour of this opinion, another was equally sure it was a fracture. Both were wrong, and both were right. The skiagraph showed a fracture of the humerus high up, and the head of the bone was also thrown right out of the glenoid cavity. Imagine the insuperable difficulty that must attend the diagnosis of such injuries as these through thick muscles and effused blood. In these days, then, your first duty must be to obtain a skiagraph, and, if you are in a remote country district, you had better send your patient to the nearest public hospital, if he cannot afford the services of an expert, with the requisite apparatus. When you see the skiagraph you know exactly "where you are," and whether you are able to treat the case without further professional aid. On no account guess at the nature of complicated fractures near joints. If your guesses are not accurate you will be landed in great disaster. The assumption of knowledge not possessed is a common failing of our profession. If once patients detect it, your reputation and good position with them is gone for ever. If it be impossible to obtain the X-rays, the next best thing to do is to examine a complicated case with anæsthetics. Here, you must remember two things. Firstly, there have been chloroform disasters in these cases, and, secondly, the stomach must always be emptied, by nature or emetics, before you anæsthetise.

In a drunken man, with his stomach full of alcohol and food, this precaution is especially important.

I have one more caution to give you before leaving the subject of diagnosis of fracture. Do not overlook them in infants and young children. I cannot tell you the unpleasantness I have known arise between doctor and patient over this. In a bad midwifery case, especially in difficult presenta-

tions of the breech, examine the limbs carefully after birth, and do not wait for the mother or nurse to point out to you that the infant has a fractured humerus! Again, children are often dropped by the nurse, and nothing said about it. If a child cries on being handled without obvious cause, examine carefully its clavicles, and long bones, and remember the fractures are often "green-stick," and not complete. A little child is very likely to get one of these injuries from a slight fall, and you are only too apt to overlook them, a lump of callus gives the first indication of the truth, and then the patients usually change their medical adviser. So much for the great and patient care, and the caution you must exercise in diagnosis. It is impossible to over-estimate or exaggerate their importance.

We pass on to some further general points regarding the treatment. Reflect very carefully whether you had better undertake the case without further aid. I am speaking now of practice in populous and civilised parts. A poor patient with a very bad fracture is better off in the nearest hospital than in a cottage, and you will be saved endless worry and anxiety, and probably much subsequent ingratitude and reproach. In putting the patient to bed, mind the latter is prepared properly. Elaborate "fracture-beds" are not to be obtained in provincial practice, but the patient should not be placed on a feather bed or soft mattress, as is too commonly done. It is impossible to treat a fractured thigh or leg properly under such circumstances.

Get the carpenter to make some broad, flat boards, and place them under a mattress, so that the patient lies absolutely straight and flat. A door laid under the mattress is a good substitute. Whatever splints or appliance you determine to use must be put on with all possible gentleness. You may not be able to avoid hurting the patient a little, but he will be grateful to you for avoidance of roughness in your manipulations. Gentleness and kindness, which you cannot assume unless you naturally possess them, will do more to win your patient's confidence than anything else. Anaesthetics are valuable aids to the reduction and "setting" of fractures, and I advise you generally to employ them. When you have done all you can to put the broken bones in a good position, you will next

be asked for a prognosis, and here one of your principal difficulties will arise. I can only tell you this, with practical experience of the management of fractures, extending now over many years, I never diagnose or treat a bad fracture, especially near a joint, without suggesting a consultation with some hospital surgeon of experience and good repute. Having heard me say this, you may act for yourselves in the future. The ultimate results of such injuries as a bad "Potts'" fracture, fractures of the upper or lower end of the femur, fractures into the elbow-joint, especially in old or rheumatic persons, are often very unsatisfactory. Some deformity, some lameness, some loss of mobility of the articulation persists, and may persist permanently, even with the best of skill and care. A man will break his thigh or leg in the worst possible manner, and he cannot be made to understand that the subsequent deformity or lameness is due to the severity of his injury, and not to lack of skill in treatment. The patient, if a foolish or cantankerous person, and there are many such, naturally wishes to blame someone for his trouble, and the person he will blame will be you. His friends and relations will do likewise, and the aid of the law may have to be invoked for protecting the unhappy, but probably injudicious, practitioner. The lamentable result of non-union may occur. It is a sad calamity for the patient, and though it is true that this is usually the fault of the patient, and more rarely of the treatment employed, neither may be to blame. In some persons simply no reparative material is thrown out, or the effusion is poor and feeble, and no true calcification takes place. You never can tell when this distressing termination may eventuate, and, oddly enough, it is not unknown in the long bones of children, where you would naturally expect union to be speedy or sound. Only last year an action was brought against an old student of this hospital, who occupies a justly respected position in a large country town. He attended a man for a broken tibia in the local cottage hospital, and the bone failed to unite. The operation of wireing the fragments was afterwards done in London, and the patient showed his appreciation of the gratuitous treatment he had previously obtained by entering a claim for £800 damages against his medical attendant When I tell you that the latter had

the good fortune to belong to the Medical Defence Union, a necessary qualification for the treatment of fractures on modern principles, you may understand that the action speedily collapsed. Another perfectly unavoidable result, especially of bad fractures of the humerus or fore-arm, is injury to the main nerves, and here, again, unless the greatest circumspection is used, severe blame may unjustly be thrown upon the attending practitioner.

Again union, at first firm, may afterwards soften, and bending and distortion take place. This is, fortunately, very rare, yet I have experienced a most annoying instance of it. The lady, who was the sufferer, was a very sensible and pleasant patient, and no unjust reproaches were heaped upon my head; but I may confess to you that I used to hear the sound of her crutches approaching my consulting room with anything but feelings of pleasure!

I have often, in this theatre, heard the late Mr. Pollock speak of fracture of the neck of the thigh-bone in the aged, and how such an injury was often followed by fatal consequences, and generally by non-union. You are not to think that these disastrous consequences are going to happen in all cases. They are very exceptional, but still they do occur, and no one can certainly tell when or how, and these home-truths, perhaps, hitherto have not been made as public as they should. Now, bearing all this in mind, it is always my practice to write an opinion appropriate to the case, and sign it, and keep a copy of the letter by me. I need hardly say that such letters must be carefully worded. The following is a fac-simile of an epistle of this nature, and may serve as a guidance to you in the future:—

"Dear Mr. ——,

"The skiagraph of your injury shows that you have a fracture into the elbow-joint of a complicated nature. I regret to have to say that when the reparative material is thrown out, and new bone is formed, the future functions of the joint must be impeded, and stiffness and loss of motion will be the consequence. I will do all in my power to obviate this, by proper and persevering early movements of the joint, but recovery will be difficult and tedious, and some impairment of usefulness must ensue, it is impossible now to say to what degree. I tell you this because, if you or

your friends should desire some surgeon of repute to see your case, and advise concerning it, now is the time before the bones have joined. I should be sorry to receive blame afterwards for what is really unavoidable from the nature of your injury, and, if you are at all in doubt about what I say, you had better call in additional aid. Please keep this letter by you.

                    " I am, dear sir, &c.

" P.S.—I enclose names of surgeons of eminence for you to select from, in case you desire, as I do, consultation upon your case."

You can at once see how the production of a letter of this kind in a law court would protect your interests and reputation.

In the majority of cases, I am glad to tell you, the prognosis of fracture is distinctly cheerful; but remember that the recovery of the patient is not quite the same thing as the union of the fractured bone. A broken femur will unite in six or seven weeks. But then the union is not firm enough to allow the patient to bear his weight upon it; if he tries, the bone may break again! The torn and lacerated muscles have to be repaired, and their action slowly accommodated to the altered position of the bones. The stiff and painful knee and ankle have to be reckoned with. A long period of treatment by massage movement and rubbing must be instituted, and this is an insuperable objection in my mind to putting up fractures in immovable apparatus, as plaster or silica, after the bones have joined. Again, a common accident, like a Colles fracture, may take many weeks before restitution of the function of the hand and wrist is complete. · The recovery from fractures is gradual, not sudden; you may tell your patient the average time it takes the bones to join in healthy persons, but you had better not tell him any more, unless you wish to see your predictions rudely falsified. Very seldom will you find a patient, who has been treated for fracture, grateful. If it be true that the love of money has its seat in enlargement of the prostate gland, it is certainly true that ingratitude dwells in the shafts of the long bones!*

Much will depend upon the type of patient you have to deal with. You may refuse to operate upon a diabetic, a paralytic, or a man suffering

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* Statement by a lecturer on anatomy at one of our largest hospitals.

from ataxia, but you will have to treat bad frac-. tures in these persons if they sustain them. The sub- jects of fractures may be very bad and unhealthy individuals. Consider what occurs in a case of a broken thigh or leg. Here you have a man pre- viously in full enjoyment of his bodily powers, suddenly struck down by a terrible accident. His occupation, or important business, rudely inter- rupted, all his arrangements disorganised, perhaps his livelihood temporarily gone. In addition to severe bodily suffering is commonly super-added the trouble of mental worry He is likely enough a strong, healthy man, who has never been con- fined to bed in his life befcre, but, unfortunately, he may be a hard drinker, and this induces a com- plication which I must especially treat of. The pain, the terrible irksomeness of lying in bed in one position night and day, will naturally make a man miserable and fretful. His digestive func- tions are all impaired, and, if gouty, an acute attack of this disorder may appear for the first time. If he be naturally passionate and irritable, and has anxious and fussy friends, you will have burdens laid on you hard to bear during the first few weeks of his illness. The rule I apply here is to imagine how I myself would behave under the patient's circumstances, and I am then generally able to make all allowances for the complaints and whims of the most fractious patient. In hospital practice you see nothing of all this. Most of the troubles of these cases fall upon the shoulders of those patient and overworked ministers to the sick, the nurses. But you will have to take your full share of them in private practice, and they will come upon you as a great and disagreeable sur- prise, for which your previous education has not fully fitted you. One of the first symptoms you have to combat is pain and sleeplessness. I fear most of you will at once fly to that abomination of modern practice, the morphia syringe. Time and space will not allow me to tell you of the horrors induced by it, or of the catastrophes engendered by its indiscriminate use in what are termed " neurotic " individuals. I never employ morphia unless to combat absolute agony, and then only in the form of suppository, not allowing the patient to know what is administered. It seems hard to say so, but it is ultimately best for these patients to sleep as the result of pain and weariness, than from powerful sedative drugs. I have several

times in the last few years been asked to allow hypnotism to be employed. I cannot see that this process would combat really severe agony, though in certain individuals it undoubtedly soothes the exaggerated pains of an overworked nervous system. I would never advise hypnotism, for it deals with factors beyond our control, and if patients or their friends insist upon it, they must take the responsibility of damage to the mind or will of a probably already feeble-minded person. The next trouble, which bothers healthy and sen- sitive people in a way you little imagine, is the action of the bowels and bladder.

Retention of urine may occur, necessitating the careful use of soft catheters, or the reverse condi- tion, constant dribbling of urine in the feeble or aged. This is a most awkward and serious com- plication. Nothing is more likely to produce excoriation of the skin and bed-sores, and it calls for elaborate care in the use of the urinal, and in changing the draw-sheet. The mere fact of having to keep the recumbent position in aged persons may lead to cystitis and alkaline, offensive urine, so that you have to wash out the bladder daily, and administer appropriate remedies by the mouth. Constipation very commonly occurs, and if the patient suffers from hæmorrhoids, they are very likely to become inflamed, and to give great trouble. The very introduction of the hated bed- pan seems to inhibit the action of the bowels in a man who is suddenly confined to bed. The practice here is to regulate the dietary, and to give every other night some mild laxative with an oil enema in the morning. An appropriate bed-pan must be slipped under the patient, who may raise himself by a pulley suspended above the bed, and by the hands of attendants placed beneath the back and buttocks of either side. If he be a fat, heavy man, the difficulty connected with the bed- pan is very great, and it is a matter which gives the patient more misery and uneasiness than you generally imagine. An excellent fracture bed is made, where a portion withdraws from beneath the buttocks, for the evacuations. The drawback of all such appliances is this—they are not obtain- able in provincial practice, and, even in London, I regret to say that the arrangement for ob- taining proper apparatus for bad fracture cases are very incomplete. A serious abdominal com- plication of fractures of the lower extremity is

distension of the bowels with flatus. This is very prone to occur in the obese and feeble, whose weakened abdominal walls hardly move in respirations. You may find such patients blown up and distended, with a weak pulse, and blue cyanotic faces. The administration of a turpentine enema, and the administration of carminatives by the mouth, is usually followed by great relief. All through the process of union of a fracture the greatest care should be exercised to keep the urine acid by the administration of mineral acids by the mouth, phosphoric acid is a favourite remedy of my own. Patients with ununited fractures almost invariably have alkaline urine. Much that I have said applies to fractures of the lower limbs. In fractures of the upper extremity, all such troubles are generally avoided. The patient, even if old and feeble, should be kept sitting up in a chair, and never allowed to take to his bed. If you allow a very old and feeble person to lie in bed with, say, a fractured humerus, his case will likely do badly. All the troubles of nursing, dressing the back, and managing the urinary organs and rectum are enhanced in the case of extremely heavy and fat people, and with the best care bedsores may occur. This is a very disastrous complication, and may prove fatal. In a country house you must regularly teach the men employed in the garden, or otherwise, to help lift or move the patient, while the nurse dresses and cleans the back. The strength of one or even two nurses is seldom equal to these tasks. Indeed, good nursing is of the first importance in fractures of the lower extremity, and its value cannot be over-estimated. An air or water pillow may, with advantage, easily be placed under the sacrum. It should be flat, and not high enough to interfere with any splints employed.

Finally, in connection with this subject, it will be an excellent lesson to all of you if you will momentarily unbend, and learn how one of these cases is nursed, see the draw-sheets changed, and watch the application of the bed-pan, and how all such minutiæ are managed. I repeat that, in a private patient, you will have to direct how all this is to be done, and to supervise it. Unless you do this properly complications will certainly arise, which may lead to very disastrous consequences. While a student will talk glibly about the process of union of fractures, the nature of the

cellular products, and the process of ossification, he will be quite ignorant of the methods of "nursing" a bad fracture, which, to the patient at least, is perhaps of more consequence.

Perhaps the most awkward and distressing complication of fractures of the lower extremity is delirium tremens. Difficult enough to manage in a well-equipped hospital, in private practice the difficulty is enhanced, and, indeed, is so great that for the patient to recover with serious deformity is quite a common thing. In compound fractures many bad cases of delirium are really septic in nature, and the distinction between the delirium of sepsis and that of alcoholism is not easy, and indeed these two causes may be combined. The ideas of undue quantities of alcohol vary very much in different localities of the British Empire and different persons. The "fiery-faced" hunting man, who consumes a good many brandies and sodas in the course of the day, with a maximum of brandy and a minimum of soda, would be very indignant if he were told that he drank too hard! Indeed, he often holds himself up as a pattern of abstinence to his neighbours, and if he breaks his leg, and gets delirium tremens, his friends will be very indignant at your diagnosis, and, perhaps, it is better to be content with the term "delirium," which will be quite sufficient, and, indeed, is very obvious. On the third or fourth morning, perhaps, after the accident, you will begin to notice that your patient is queer in manner, rambling, and incoherent. Frequently he announces his intention of getting up, and going to his club, or to the market town. He assures you that he is all right, and sometimes indulges in merriment and self-complacency, very different from what you would expect in a man who had suffered from a bad accident. The night following he may be raving, and the terrified, inexperienced servants and relations utterly fail to restrain him. You will find him sitting up in bed, covered with moist sweat, and picking at the bedclothes with tremulous hands. His delirium will have the characteristic of being connected with his usual avocations. If a racing or hunting man he will talk incoherently about his horses or stables, and may cheer on the hounds with shouts. You will find, to your consternation, the bandages undone, the splints displaced, and the ends of the broken bones poking against the muscles, the fracture seriously threaten-

ing to become a compound one; indeed, the whole situation is difficult and distressing beyond belief or description. I must here once more most seriously warn you against the dangers of the morphia syringe. There is a natural tendency to use it, for you feel driven to your wits' end. But remember that many of these patients have deeply congested lungs and fatty hearts, and diseased or badly-acting renal organs, and an injection of morphia may prove fatal. The patient becomes cyanotic, and passes into coma, with stertorous breathing and flapping of the cheeks. Such symptoms are conveniently called uræmic! I warn you regarding this matter seriously, I do not speak from hearsay.

The treatment of delirium tremens is too large a subject for me to enter into to-day. Some of you know my own practice is to administer full doses of bromides in small quantities of good stout. The success of the case will largely turn on the care of the attendants. Unless the patient is able to obtain the services of good, trained, male nurses, disastrous results are very likely to follow.

You must at once decline any responsibility of what may happen to the fracture in these cases. They are always associated with risk to life, and if faulty union or non-union occurs, the condition of the patient is serious. You will do well to make this very clear to the friends and relations. Nevertheless, do what you can. Bulky sand-bags, with a heavy weight of seven to ten pounds, upon the foot and leg, in a case of fractured thigh, with delirium tremens, are of the greatest use—one large bag is placed on either side, and another across the fractured limb. Nothing, however, is so good in these cases as the plaster of Paris apparatus, and I have brought several cases of delirium tremens, with bad fractures, safely through with it. The careful administration of chloroform is very useful in checking or subduing the delirium, and while the patient is under the influence, the limb may be carefully secured in plaster of Paris bandages.

Here you are especially likely to come to grief unless you are well versed in such apparatus. The bandages will be too tight or too loose. One thing you must be careful of, and that is, that your bandage is not too tight, and that the limb below is also carefully bandaged to prevent swelling, leading to constriction, and risk of the dreadful com-

plication of gangrene or sloughing. If you have any doubts as to this, the plaster may be slit up the centre, and bandaged round. The immovable plaster case has this great advantage, that the patient cannot pick or tear it off, and he may roll about as he pleases, yet no serious displacement of the bones may occur. I have only given you a sketch of the difficulties you incur in these cases, and the two principal indications are good attendants and the immovable apparatus. The former are most difficult to obtain in country practice, and you have to put up with labourers, gamekeepers, and the like, who generally become afraid of the delirious, and restrain them by violent means, and sometimes require so much alcohol to sustain their own strength and nerves, that they may become almost as bad as the patient!

Much has lately been written about the treatment of fractures by massage. Many of the worst results of "simple" fractures, as stiffness and adhesions in the neighbouring joints, implications of bones in inflammatory material, and the adhesion of tendons to their sheaths, are due to the long confinement, and the undue interference with the circulation by the pressure of splints and bandages. Accordingly in cases of fracture, where no great displacement occurs, as is notably the case in some fractures of the tibia and femur, daily massage may be employed to the best advantage. Personally, I would not advocate commencing before the end of the first week, for the danger of disturbing the newly-formed venous clots, though remote, must not be ignored. In very oblique fractures, however, that start out of position, when restraining splints or bandages are removed, I question whether this method can be safely employed until some union has occurred. Nothing is so important as the methodical and careful use of massage and movement in fractures so soon as ever the bones have united. Much of the dissatisfaction that occurs as the result of treatment is due to neglect of this most important consideration. The surgeon should see to this himself, and not leave it entirely in the hands of "rubbers." I have several times had occasion to treat painful joints after fractures by movement under anæsthetics. An unexpected adhesion gives way, and the functions of the joint are restored as if by magic. It is better to do this for yourselves, than allow the nearest bone-setter

to shame you by doing it for you! If a joint is painful and insecure after a fracture, there is generally an adhesion in or about it, which needs " snapping."

The treatment of simple fractures by the operation of wiring, or screwing the fragments together, must next engage attention.   I have elsewhere drawn attention to this method, and I may only point out to you now why it can never be of general utility in practice.   In the first place, the operations are not easy in their actual performance.   The few cases I have done I have found difficult.   If any error occurs in the aseptic technique of an operation demanding large incisions, the opening of lacerated tissues sodden with effused blood, and the exposure of the medullary canal of bone, very serious consequences may readily ensue.   We are all human, and, if the truth were told, occasional failures to maintain perfect asepsis occur in the practice of the most careful and methodical.   In country districts, however, the patients will solve the matter for you.   They are not likely to submit to operations for fractured limbs without great persuasion and difficulty, and the doctor who advocates such treatment is not likely to be very popular.   In my opinion, therefore, operations for the union of fractures should be confined to cases of simple fractures when the obliquity of the fracture, or its position, renders it peculiarly difficult to manage.   Even then the operation should only be undertaken by a hospital surgeon well versed in the technique of aseptic and operative surgery.

The so-called green-stick fractures in children present a special difficulty in their treatment, not universally alluded to in the text-books.   The bone is bent, not broken.   If you merely put on splints you fail to restore the straight line or natural curve of the bone, and the patient recovers with his fore-arm, let us say, bent at an obtuse angle. Several instances of this have been brought to me by angry parents. I believe that time greatly rectifies many such displacements, but they look very ugly, and this is how you are to avoid them. Give the child an anæsthetic, and remember that chloroform is not an absolutely safe anæsthetic in children, as usually taught.   Then forcibly bend the bone the reverse way, often you hear a crack, and the solution of continuity becomes complete, but you have brought the axis of the

bone straight, and now merely have to apply splints. But, if you hide the deformity beneath splints and wool, it will dawn upon the parents, when the splints are taken off, that the case has not been managed well, and then the trouble begins.   The late Mr. Pollock used to tell us in his lectures the story of a parent who adopted the sign of " The Crooked Arm " over his public-house!   This was to annoy the doctor, who had a bad result in treatment of the fractured arm of one of the publican's children.   The medical man endured such unpleasantness that he had ultimately to leave the town.

I must not omit to call your earnest attention to one or two matters in connection with the treatment of fractures, of indirect association with the treatment, but of great importance.   It is likely enough that you will be asked to meet several surgeons or practitioners in consultation, if the case is a bad one, and the parties concerned foolish and importunate.   I make it a rule never to refuse meeting anyone whose name is on the Medical Register, if the patients wish me to do so.

If a man's style of practice is so irregular and bad that, in the judgment of many, he should be professionally tabooed, then it is the fault of the powers that be that he is on the Register of the profession at all.   As the good of the patient is your first thought, so you should try and guide him and his friends to select consultants who you feel are really able to help you in the case, and, perhaps, to shed more knowledge upon it than you may possess.

But if the patients choose otherwise you cannot help it.   You must never take offence at being asked to meet a man junior to yourself, or in an inferior professional position, and the unfailing rule of doing to others as they should do to you, will help you over many difficulties.   It is otherwise if the patients insist upon employing an irregular practitioner, a bone-setter.   In certain country districts this is common enough, and I have known surgeons of the highest grade and reputation ousted by these vulgar pretenders.   The new Medical Bill to abolish unqualified practice, which is the crying need of the profession, is as yet only flickering upon the horizon, and some of you may experience this trying and annoying ordeal.   Your duty is simple.   If the people are so ignorant as to call in an unqualified man, you

must retire from the case, and state your reason in writing for doing so—all these points are very disagreeable and embarrassing, and you will do well to lay the matter before someone you can trust for counsel and advice.

Next, be sure you take careful notes of the progress of your case. The date of applying splints, of altering them, of taking them off. The dates of unusual complications, as the onset of delirium tremens, should all be carefully noted, you will find these notes of the greatest help in the event of legal troubles afterwards. Nothing gives a worse impression in a court of law than for a doctor to have to confess that he has taken no notes of his case. I must honestly say that the difficulties and troubles I have seen in the management of many cases of fracture make me feel very charitable for the want of success of others, and this brings me to speak of another point which I wish, for our own credit, I could leave unnoticed.

I have almost invariably found that when unpleasantness arises about the management of fractures, or the results of treatment, the explanation is generally to be found in some disparaging or ill-natured remark of another practitioner in the same town or district. It is almost an aphorism with me that the troubles of the profession originate in the profession itself, and it is so here. If you are ill-natured enough and foolish enough to say that Miss H.'s clavicle would not have had that lump upon it if the fracture had been treated by yourself, or by such and such a method, you have put the match into the tinder and a blaze soon occurs! You may have mentioned this in strict confidence to supposed discreet persons, leading persons in your district, but they pass it on to their wives, and your remark is the common talk of every tea-table in the town in twenty-four hours. I fear the acute rivalry of practice in country towns fosters these unsociable exhibitions of petty jealousy! I only mention such disgraceful doings to you in the sincere hope you will ever avoid and shun them.

In conclusion, I may urge upon you the great importance of close attention to detail in managing a case of fracture. No pains or care must be spared in doing everything for the welfare of the patient, seeing that the splints are properly padded, preventing the skin from getting chafed, relieving pressure by pads and pieces of cotton

wool, and leaving nothing undone that ought to be done. If, with all your care and pains, a poor result ensues, you will be held blameless, it can be proved that you have exercised all ordinary skill and care. When I say this, I must warn you against running into the opposite extreme. Some surgeons, in their anxiety to obtain perfect apposition of the bones, are always pulling these cases about, giving them anæsthetics, altering the splints or apparatus constantly, and so on. These well-meant endeavours are very apt to defeat their own object, and I believe I have known non-union result from such ill-judged interference. Nature is very kind to us if we give her a chance.

You are not to suppose that every case of fracture you meet with is going to give you great trouble and anxiety. The majority are easy and plain enough, provided you bestow upon them elaborate care and attention. I do not certainly know who was primarily responsible for the unfortunate and misleading term, " simple fracture." The public do not naturally interpret the word in the surgical sense, and, if a fracture is said to be simple, the patient and his friends regard it as easy to manage, of no grave consequence, whereas, in truth, I think you will gather that a number of simple fractures are among the most difficult and complicated cases that we have to contend with. I wish the ancient author who invented the term could have heard this lecture. I think you will agree with me that he might be inclined to modify the nomenclature for which he is responsible.

Kernig's Sign in Meningitis.—This was lately the subject of a paper by Dr. J. B. Herrick, of Chicago. This sign was an inability to extend the leg when the thigh was flexed at right angles to the body. He noted nineteen cases with six autopsies, and said that this sign was present in 80 per cent. to 90 per cent. of the cases seen, and was only exceptionally present in other affections. It did not result from intracranial pressure. The technique was simple. Dr. Osler did not think that the sign had been of great help in diagnosis, but in certain cases it might prove to be of much value. It was an interesting sign, and the experience of Dr. Herrick and others showed that it was present in a large number of cases.
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ON SOME RARER FORMS OF ABSCESSES CONNECTED WITH TEETH.*

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GENTLEMEN,—The common alveolar abscess is outside the scope of this paper, but I must draw attention to the fact that it is not really an *alveolar* abscess—the term refers only to the common site of exit of the pus, and is a very misleading expression. If you will look at the teeth in either upper or lower jaw, you will see that the roots of all the teeth reach well into the body of the bone, beyond that part which is called alveolar, and well beyond that part which will be absorbed on extraction of the tooth. Hence an abscess starting, as is the common event, from septic absorption of dead pulp, is an abscess of the body of the bone; or, in the upper jaw, perhaps, abscess of the antrum.

Two other anatomical points are worth remembering: the insertion of the buccinator into either jaw is of sufficient strength to direct the course of pus; and the roots of teeth vary in length.

These small points are important when considering what may happen as a result of suppuration round the apex of a tooth.

The forms of abscess to which I wish to draw attention are such as have come under my notice, and I do not pretend to have made an exhaustive list of the baneful possibilities of an abscess started by a tooth. An abscess formed round the apex of a tooth, after perforating the outer plate, may track a little way up beneath the periosteum, and perforate on the side of the alveolus into the mouth; this is the common form.

But it may have perforated the outer plate below the attachment of the buccinator, in which case it will first strip up a greater or less extent of periosteum, forming a sub-periosteal abscess when the area stripped up is of any considerable size; then burrowing in the tissues of the cheek, it will form a second pocket for itself, usually subcutaneously, after which it perforates the skin

* Delivered at the Annual Meeting of the British Dental Association at Ipswich.

and opens outside. Or, if the pus finds itself entangled among the planes of connective tissue of the neck, it will continue to burrow among them, forming a pocket wherever there is a large plane of tissue to be stripped up, until arrested by some firm, bony attachment where the final collection will take place, and the abscess will open itself.

This opening on the outside, then, is dependent on two things—the length of the tooth, and the position of the attachment of the buccinator. It is not very rare, but certainly may be included among the rarer forms. It occurs chiefly in connection with the lower teeth, but I' have seen it also in connection with the upper teeth. The cause of the trouble was a right first permanent molar; the periosteum of the jaw was stripped up over a large area, and there was a large sub-periosteal abscess, from that was a small tract leading to a subcutaneous collection of pus, with two large pockets opening by two sinuses about half an inch below the lower border of the orbit.

So far we. have, as rarer forms, the sub-periosteal abscess; the collection of pus formed between the planes of connective tissue, and limited by the anatomy of the part, intustitial abscess, and the subcutaneous abscess. The first of these should be treated from inside the mouth. In opening it, it is a safe rule to keep close to the bone, the soft parts being stripped off the bone by the pus, and carrying important structures with them. They may be drained with gauze or drainage tube, and must be syringed frequently, e. g. three times a day. I have successfully drained into the mouth a very large sub-periosteal abscess situated over the angle of the jaw, and requiring some two inches of drainage tube to reach it. Sometimes, however, the sub-periosteal and the subcutaneous abscess are so close one over the other that the same incision, which must be made to open the subcutaneous, will open up the sub-periosteal, which should then be treated from the outside. In this case you may be alarmed by the extent of the bone laid bare, and by the white colour it will present; but though I have seen large extents of bone, three or four square inches, bare and white, I have never seen necrosis take place. The bone still has its internal blood supply, and constant cleanliness will prevent infection from without. Collections of pus

between the planes of connective tissue, or sub-cutaneous, must be treated from outside; they cannot be easily or safely reached from within, and when there are signs of suppuration an opening should at once be made. Hot fomentations and delay tend to increase the amount of pus and render the subsequent scar unsightly, making a scar that adheres to the bone almost unavoidable, which early incision would probably have prevented.

With regard to the scar, which is often most disfiguring, it should be released from the bone by a tenotome passed close to the bone either from inside the mouth, or from outside, whichever is more convenient; and subsequently the parts should be massaged daily to prevent re-adhesion.

In all these forms of abscess, as also in the glandular to be mentioned directly, it must be remembered that whenever they persist for any length of time, the tooth which originally caused the mischief may have become quite painless, being perhaps cut off from the abscess, and apparently healthy again; or, though there is still suppuration going on round its apex, yet painless owing to an external sinus having formed, and providing drainage; or the secondary mischief may persist after the tooth has been taken out, especially in subjects of low vitality.

This remark applies particularly to the last form of abscess under this group, to which I wish to draw attention—glandular abscess. A glandular abscess may form as a result of direct absorption from the original focus round the tooth, or from infection from one of the secondary collections of pus. It is usually a sub-maxillary gland or one of the higher superficial cervical glands which is affected. In the case of people of "strumous" diathesis, i. e. of low resistance, the gland may enlarge from but slight irritation, and may break down long after the original tooth trouble has been forgotten. It is, however, to the acute glandular infection that I especially wish to draw attention, since it is in some cases the starting point of spreading cellulitis of the neck, a most fatal disease. The cases in which we should be particularly on the guard for this disease are those in which the glandular implication is very acute, and those in which, on looking into the mouth, there appears to be but little

trouble around the offending tooth beyond some tenderness and injection of the gum, while yet the glandular trouble is considerable. In such cases I am convinced early incision will save life.

There are two other forms of abscess which I wish to describe: the one may be called the chronic abscess of the maxilla, *par excellence*; and the other is an abscess dependent on tooth remains, or on the healing over of an imperfectly drained septic socket.

The first form, chronic abscess of the maxilla, when fully developed, has hollowed out the whole body of one maxilla till it is only a shell of compact tissue, remaining, however, limited to the bone of its own side; it opens by a small sinus over a tooth, usually incisor or canine, and though it may have perforated the bony shell elsewhere, e. g. in the palate, never has a second external opening; the discharge is thin, and not profuse; there is little or no pain or tenderness; there is no bony enlargement, and but slight swelling of the soft parts. The cavity is irregularly lined with granulation tissue. The originating tooth is indicated by the position of the sinus, and is by this time always dead. If it has died as a result of caries, there will be a history of one or more acute attacks; but if, though dead, it be free from caries, then there may be no history of pain, and the patient may even be unaware of any abscess. On examining the tooth it will be found loose from absorption of its socket, which may have gone in nearly the whole circumference, and a small steel probe will be found to pass right up to the apex of the tooth. The pathology of such an abscess is this. There has been a destructive caries of the alveolus, spreading up to the apex of the tooth. This has been started first by the deposition of a ring of tartar around the neck of the tooth, followed by the lodgment of food and debris, which has decomposed, and set up a destructive caries of the alveolus. The process, once started, is self-supporting, more tartar and more debris taking the place of the destroyed alveolus, till at last the apex of the tooth is reached, and the vessels nourishing the pulp are exposed to the attacks of the disease. These become thrombosed, the pulp dies, and the whole is readily infected *via* the apical foramen. From this point the disease spreads throughout the whole bone, reinforced

by the decomposition of the pulp. The process appears to be a slow, infective caries of the bone, different in nature to the ordinary abscess of acute origin.

Obviously an abscess of such pathology may occur in the lower jaw, and I think I have seen it, but one with similar clinical features does not occur, since the shape and size of the bone do not lend themselves to it, and the periosteum of the lower jaw, if irritated, will deposit new bone; while that of the upper jaw appears to lose this function after about the age of sixteen, explaining why there is no bony enlargement in these cases.

This abscess must be opened, scraped, and drained and syringed, and it should be remembered that during the healing there may be more pain than there was previously, often referred to the teeth, the nerves of which may be caught in the contracting cicatricial tissue. The tooth itself may be saved if firm enough, as the extraction of the one tooth does not go far towards destroying one of the bony walls, and thus hasten healing, and, as a matter of fact, an extensive cavity of this kind takes as long—several months—to heal after extraction of the tooth as without. An interesting point may be noted in connection with this abscess. When an opening has been made into it, and the cavity is filled with blood, or other fluid, the fluid can be seen to pulsate. This is a pulsation communicated to it by the vessels in the walls of the cavity, and is analogous to a form of pulsation seen in bleeding, or oozing of clear fluid, from the external meatus of the ear.

The second form of chronic abscess occurs in both jaws, but is clinically more interesting when occurring in the lower. It depends on the presence of a small piece of the end of a fang, such as I show you now, or on insufficient drainage after the extraction of the dead tooth. This latter form I have noted only in the lower jaw. When such a small piece as I show you is left in, it is well within the body of the bone; the alveolus closes over, and is absorbed just as if the whole tooth had been taken out; and the same may happen after the extraction of a tooth whole, the source of irritation in this case being some small piece of dead bone, or some small collection of pus cocci, which, harmless at first, have slowly multiplied and gathered strength

until, from lowered resistance or other cause they are strong enough to cause suppuration.

When this occurs in the upper jaw there is pain and tenderness, some swelling of soft parts, but no bony enlargement; the trouble may not be continuous, but may subside and recur again at intervals. If untreated the antrum may be involved. The nearest lymphatic glands may be enlarged. I show you here a small piece which, five years after extraction of the rest of the tooth, caused such an abscess, with subsequent involvment of the antrum.

When the process occurs in the lower jaw, the following set of symptoms is found. As in the upper the alveolus may be entirely absorbed, and there is pain and tenderness. There is also some local swelling; in this case partly of soft parts, but chiefly bony, involving the body of the jaw. Owing to the position of the inferior dental nerve, there is often, especially in the bicuspid region, severe neuralgia. As in the upper, the nearest lymphatic gland may be enlarged and tender. The neuralgia is caused by the abscess in its enlargement opening up the canal of the nerve, and I have in two cases satisfied myself that the nerve was actually at the bottom of the cavity.

The pain in this case is very severe; there is continuous, heavy pain, and the more acute shooting pain which occurs at intervals without any necessary regularity. During an attack it is set up by any irritation, such as cold air, movement of eating, &c.; it spreads in anatomical order to the other branches of the fifth nerve, first to the ear, then up the side of the head to the vertex, to the infra-orbital nerve, to the supra-orbital nerve, and down the neck. It lasts a varying time, from a few seconds to hours. It is unaccompanied by trophic changes, but may be accompanied by increased secretion of tears or saliva. It is confined to the one side, and appears always to start from the one point where the seat of mischief lies. It must be remembered that if the abscess have not involved the inferior dental nerve, this neuralgia will be absent. And in a case I recently operated on, dependent on a first molar tooth, there was only a slight local pain, tenderness, or swelling, but dull aching on using the jaw for eating, and one small gland was enlarged and tender; an abscess was found deep in

the centre of the bone, and the man is now re-lieved of all his symptoms and fears of cancer. In this case no piece of tooth was found, and all the other teeth were sound.

The length of time during which things may lay dormant varies greatly, five years in the case of the piece I show you; fifteen years in the case of the man related above.

When, therefore, a patient complains of pain or neuralgia starting in a spot where there is now no tooth, there may yet be a chronic abscess originally dependent on that tooth, and it is im-portant to remember that the alveolus may be normally absorbed. Other points in diagnosis are: local pain and tenderness, with some swell-ing of the soft parts, and in the lower some bony swelling; pain starting from one point—the seat of mischief (this I have hitherto found constant, but it may later prove not to be so), unilateral, and perhaps accompanied by increased secretion of tears or saliva; swelling of nearest lymphatic glands. A skiagram should always be taken of doubtful cases.

The treatment consists in opening and drain-ing. This sounds very simple, but where the bone is thick, and the site far back in the lower jaw, and in addition the soft parts very movable and bleeding freely, it is by no means easy. I have had a special trephine made with a heavy handle, to give steadiness, and with stout teeth, and have found it most useful.

In the after-treatment, the cavity should be packed lightly, and syringed at least twice daily. A lotion used should be made with boiled water, and used in plenty. The mechanical cleansing of a good flow of water is most important. You cannot use very strong solutions of antiseptics in the mouth without making it sore; 1 in 40 car-bolic acid is the strongest permissible. Where there is inflammation do not use H_gCl_2, it is ex-tremely painful when applied to inflamed sur-faces. I must add a caution concerning formalin —even in 1 in 100 solution it may have disagree-able effects. I have seen a patient who had swal-lowed at the most 5 minims of the 1 in 100 solu-tion become faint and nauseated, and though she was sufficiently restored, by use of stimulants, to go home, yet had a recurrence of some of the symptoms after arriving there.

NOTES, &c.

Œsophageal Stricture.—Kelynack and Ander-ton (' Medical Chronicle,' November, 1898) observed forty œsophageal strictures in 4859 autopsies—that is, a percentage of 0·82 in all cases submitted to general pathological examina-tion. Of these forty cases, only six, or 15 per cent., were of a simple or fibrous nature. The remainder were undoubtedly malignant. Of the thirty-four malignant cases, a vast majority were in the male. As in the case of fibrous stricture, there was an increasing frequency from above down-ward, twenty-five cases being observed in the middle and lower thirds of the gullet. Pulmonary congestion and œdema occurred in about two thirds of the total number of cases, and broncho-pneumonia was present in nine cases. The average duration of the disease from its earliest symptoms to the final issue of the case, as reckoned from the history of twenty cases, was $7\frac{1}{3}$ months. In only one instance did the course exceed thirteen months, and in only one was the course of less than three months' duration. There was a family history of malignant disease in but three cases; in five cases there was a history of excessive indulgence in alcohol and smoking; in four cases there had been exposure to the hardships of life.

Griffith, in the same journal, describes a case of fusiform dilatation of the œsophagus without organic stricture. He states that dilatation above the stricture of the œsophagus is far from common, since food, if unsuccessful in passing through the narrowing into the stomach, does not accumulate above the obstruction, but is rejected shortly after being taken. He believes that in his case the con-dition was due to atony, and probably a congeni-tally narrowed cardiac orifice. The œsophagus had evidently acted as a reservoir, and was thrown into folds; hence an attempt to diagnose the con-dition by the passing of a sound might readily lead to the faulty diagnosis of stricture. Auscultation of the œsophagus might help in forming an opinion as to dilatation, since, if a large amount of fluid can be apparently swallowed, and no gurgling, or only very feeble gurgling, can be heard to the left of the ninth or tenth dorsal vertebra behind, a con-dition of dilatation may be strongly suspected.

The cases recorded have been characterised by great chronicity.

In the treatment of the confirmed condition little can be done beyond advising the patient to eat slowly, to masticate thoroughly, and to take a small amount of food at a time, so as to avoid aggravating the condition by mechanical disturbance. If the oncome of the condition is suspected, as it may be if it follows a severe blow on the chest, temporary rest to the œsophagus by rectal feeding, or by the use of the stomach-tube, may be advisable, followed by gentle galvanism and the observance of the above-noted precautions in eating. Feeding by the stomach-tube should be employed in all cases where possible in which the patient is manifestly losing ground, and in some cases gastrostomy might be required.

Therapeutic Gazette, April, 1899.

Hydrotherapeutics.—James J. Putnam, in the 'Boston Medical and Surgical Journal' of March 9th, 1899, closes some excellent remarks on the value of hydrotherapeutics, with a few points upon which he thinks physicians hold fallacious opinions :

1. Is a "shock," as from sudden application of cold water, useful or objectionable ? The latter view is often maintained both by patients and physicians, but the former is correct, provided only that the shock is proportioned to the habits and the capacity for reaction. Patients are apt to dislike the "shock" of cold water, and if they are feeble or nervous, it may, if severe, frighten or fatigue them. For this reason, when an unfamiliar method is first used, the application should be as warm as 85° to 90°. This will feel cold if the skin has previously been warmed to 100° or higher. On the other hand, the common practice of letting cold water run gradually into a previously hot bath, so that the temperature is slowly lowered and "shock" avoided, is an objectionable one, and much less likely to be followed by a good reaction than a sudden change, especially if the latter is associated with smart friction, as in the case of the drip-sheet or forcible cold affusion given by another person. It is not easy for a patient to make a thoroughly satisfactory cold application unaided except by an immersion bath, since otherwise, at the best, only half the body can be bathed and rubbed at one time. The immersion bath, at low enough temperature to be thoroughly stimulating, is very refreshing to

vigorous persons who are thoroughly habituated to it, but less safe for feeble persons. If the latter must take their bath unaided, rubbing with a large dripping-wet towel is perhaps the best method.

2. Hot baths, at temperatures considerably above that of the body, have primary effects similar to those exerted by cold baths, but secondary reactions are liable to occur, leaving the skin pale and cool and the arterial tone low; and, moreover, the skin is for a long time afterward abnormally sensitive to slight cold. It is risky on these accounts to take hot baths at bedtime, because the primary heat of the skin leads the patient to under-estimate the amount of clothing which will be required later, and he may wake to find himself chilled. These dangers are diminished if sufficient time is taken to allow of complete cooling before going to bed, or if the hot bath is followed with a dashing or rubbing of cold water. Of course there are cases where the sedative action of a prolonged warm bath is very useful. Massage given during warm baths is useful for elderly people with arteriosclerosis (Jacobi).

3. It is a mistake to suppose that shivering is necessarily a sign that the body is becoming chilled to an objectionable degree. Shivering frequently occurs when one arises from bed on a cold morning, yet wholly disappears with the feeling of coldness that accompanies it after a plunge into very cold water. Even blueness of the finger-tips is not necessarily a danger-sign, since it is usually due to local changes in the cutaneous circulation, and not to weakness of the heart.

4. Children do not require as low temperature as adults to develop such a degree of reaction as can be expected from them, and do not stand severe cold as well.

5. Where the reaction on the part of the vaso-motor system is to be limited to a small portion of the body, lower temperatures and more prolonged applications can be used than where the whole surface of the body is to be exposed.

6. Where drip-sheets or sheet-baths or wet packs are to be used, coarse linen sheets or damask table-cloths are better than cotton sheets, as being more absorbent and affording better surfaces for friction.

7. The mechanical impact of a stream of water delivered under high pressure in the form of a douche adds greatly to the stimulant effect.

Medicine, May, 1899.

Treatment of Enuresis. — By Dr. Adler. From Sajous's 'Annual and Analytical Cyclopædia of Practical Medicine.' Unless the cause be discovered and its removal effected, the treatment of this disease must be empirical.

Atonic conditions, in children as well as in adults, often lie at the foundation of the lack of control over the passage of urine, and, in these cases, out-door exercise should be advised and a carefully-selected diet prescribed for its nutritiousness and digestibility.

Medicinally, the use of ferruginous preparations are indicated. The syrup of the iodide of iron is readily taken by children. For adults, the peptomangan (Gude) is an excellent tonic. The dose of the first is from three drops upward, well diluted with water; and of the second a desert-spoonful to a tablespoonful, in milk or wine. Jacobi speaks highly of the elixir pepsinæ, bismuthi, et strychninæ of the National Formulary, in insufficient gastric digestion associated with atony of the stomach; a child of three years taking a teaspoonful three times a day.

Incontinence due to a weakness of the sphincter muscle is best relieved by ascending doses of strychnine or the tincture of nux vomica.

Douching of the perinæum with cold water is advised, or the application of the faradic current, one electrode being placed in the rectum and the other over the perinæum in the male and the mons veneris in the opposite sex. The current is to be gradually increased.

If incontinence is due to hyperæsthesia of the mucous membrane or irritability of the bladder, the remedy indicated is belladonna.

Baruch, Watson, and other observers bear testimony to the efficiency of this drug in the treatment of the nocturnal form of incontinence. Both belladonna and atropine are tolerated in much larger doses by children, in proportion to their size or age, than by adults. In many cases a single evening dose of the extract of belladonna (gr. ¼ to ¾ to 1), or of the sulphate of atropine (gr. 1-100 to 1-75), answers sometimes to an unexpected degree, according to Jacobi. In most cases, however, belladonna or its alkaloid must be pushed to the extreme limit before an impression is made upon the disease. Habit, which Tyson mentions as sometimes the cause of enuresis in children, may be corrected, as sug-

gested by this author, by encouraging the cautious practice of holding the water.

Masturbation, phimosis, adherent prepuce, rectal affections, etc., must receive appropriate treatment, after which the incontinence of urine, if it persists, will demand attention.

Sir Henry Thompson strongly advocates the application of silver to the urethra, whether in the the male or the female. He states that the use of a flexible bougie, small, of course, for children, passed daily, and removed in a minute or so, is sometimes successful. If this fails, the injection by means of a sufficiently long tube of the nitrate of silver solution to the prostatic portion of the urethra and neck of the bladder is a remedy of no mean value. For young women up to the age of eighteen or twenty, in whom this malady still exits, Thompson has found this treatment almost invariably successful. It should be applied immediately after the bladder is emptied, in quantity say of a drachm, and of a minimum strength of 10 grains to the ounce, up to treble that strength if necessary for subsequent application. Enough should be employed to produce smarting, which should continue for a day or so. A week or two should elapse between each application.

Some authors advise blistering of the perineum; others the use of the actual cautery, touching the same at several points around the anus. J. William White and Edward Martin state that when a habit of nocturnal incontinence is due originally to carelessness—the child, though awakened by the desire to urinate, prefers to wet the bed to getting up—such cases may be cured by having the patient waked at about one or two in the morning, or at an hour before the habitual time of involuntary micturition, and made to empty the bladder.

Volume III of 'SAJOUS' ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE' has been received from THE F. A. DAVIS COMPANY PUBLISHERS, of Philadelphia, and worthily upholds the high excellence attained by the preceding volumes. The article on enuresis, from which we have extracted a note on the treatment of that troublesome disorder, affords an admirable and striking example of the method followed by the editor in his difficult task, in which he has so well succeeded. Nothing but praise is the proper due for the article on "Infantile Myxœdema (Cretinism)," by Prof. Osler and Dr. Norton, and the other communications are as helpful and practical.

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* Specially reported for The Clinical Journal. Revised by the Author.

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ON "NIGHT TERRORS, SYMPTOMATIC AND IDIOPATHIC, WITH ASSOCIATED DISORDERS IN CHILDREN."*

BY

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Symptoms of night terrors.—The attacks are usually described in children aged between three and eight years. Older children suffer from them, but one is comparatively seldom called to treat them on this account.

Typical night terrors occur almost always within half an hour to two or three hours of going to bed. Except in cases of febrile disturbance, recurrent attacks in a single night are rare, but they may be repeated for many nights on end, or at weekly, monthly, or longer intervals. Piercing screams are heard, and the child is found sitting up in bed, or crouching in a corner of the room, with hands outstretched as if to shield himself. Sometimes he is trying to get out of the window, or to open the door. He may get outside the room, and run screaming down the staircase with fear-winged feet. His face expresses wildest alarm, his eyes are widely opened, with pupils dilated, and he gazes intently at the ceiling, or some quarter of the room in which he locates the apparition which frightens him. He often gives a clue to its nature by shrieking, " Black faces !" ' Black dogs !" " Horrid man !" or some such exclamation.

These hallucinations appear to be common in children up to the age of five or six, but in older children there is often difficulty in discovering the content of the hallucination, owing, doubtless, to its being more complex in nature, though no less

* A Paper read before the North London Branch of the British Medical Association on May 10th, 1899.

terrifying than simple visions. The child may cling instinctively for protection to anyone within reach, but he does not at first look at or recognise persons. His attention is fully taken up by the imaginary object of his fear. The period of terror lasts from a few moments to half an hour. The child usually then recognises his surroundings, but he sweats and trembles, turns pale, and seems utterly shocked and exhausted. He will beg not to be left alone in the dark again, or that his hand may be held. He soon dozes, but sobs and starts for a time before sleep becomes sound. Sometimes at the end of an attack he passes a large quantity of pale urine, but more frequently he has wetted the bed or the floor during the stage of excitement.

Next day there is usually complete recollection of what has occurred, but, in some cases, even when the child has got out of bed, and may have answered questions more or less rationally, he has never been really awake, and he remembers nothing subsequently.

The foregoing is a general account of the symptoms, but I must mention that subtle distinctions between the attacks and between the patients have been drawn.

Night terrors have been divided into "Idiopathic and Symptomatic," by Silbermann ('Jahrbuch fur Kinderheilkunde,' 1883).

The characteristic of the idiopathic variety he holds to be a transitory hallucination of sight, due to an abnormally increased irritability of the brain, whilst the characteristic of the symptomatic form is a sensation of distress arising from digestive disturbance acting through the agency of the vagus nerve, and giving rise to dyspnœa.

This distinction is not altogether satisfactory, to my mind, because it is too narrow.

Other hallucinations, such as those of hearing, taste, and of common sensation, besides those of sight, may occur in night terrors of idiopathic origin, and also in those of reflex origin. Hallucinations may be due to reflex irritation of the brain by local disorders, and hence may be included under the symptomatic variety, and this again should be widened to include night terrors occasioned by local disorders other than digestive, and not characterised by dyspnœa alone.

Dr. Coutts in an able article ('American Journal of Medical Science,' Vol. I., 1896) distinguishes

between "night terrors" and "nightmares." The latter he regards as due to reflex disturbances, the former, he thinks, cannot be thus explained.

Like Silbermann, he regards it as essential to night terrors that the child should see visions, whilst in nightmare he only dreams dreams.

Other points of distinction which he makes, are:—

(1) That night terrors seldom occur in children over eight years of age, whilst nightmare may happen at any age.

(2) That night terrors occur during the best of health, whilst nightmare attends chronic ill-health.

(3) That in the course of a night there is usually but a single attack of night terrors, although there may be several of nightmare.

(4) That in night terrors there is a family history of neuroses, such as epilepsy, chorea, hysteria, &c. In nightmare there is no such history.

(5) That infantile convulsions usually precede night terrors, but not nightmare.

(6) As regards the differentiation of symptoms, he mentions that in night terrors the child seems wide awake, but is not so. He still sees the vision which has terrified him, and is unconscious of his surroundings. In nightmare he is actually wide awake, only partially demented by recollection of a troubled dream. He is fully conscious of the presence of others in the room.

In night terrors there is no recollection of the event, whereas in nightmare there is a perfect recollection, and dread of recurrence.

In night terrors the nature of the vision never varies, in nightmare the objects of apprehension have generally been met in waking hours, and are not invariably the same.

These distinctions are so clearly and well defined that it seems a pity to cast doubt on their practical value. Yet I must confess that they seem to me to be too hard and fast. Hallucinations of vision, as part of night terrors, are not confined to children under eight years of age. They may occur at any age. Quite recently I sat by the bedside of a boy, aged eleven, who was suffering from influenza, and had a temperature of 103°. He complained of hideous faces mocking him from the bedroom wall. He was quite aware of their unreality, and did not scream with fright at them, as a younger child would do, but he saw them nevertheless.

Only last year, during a mild attack of influenza, I awoke from an uneasy slumber, and distinctly saw the ghost of a grey old man sink gradually through the floor. Had I been a baby I should have yelled with terror at the sight, but, as it was, I watched the apparition with much interest, and was sorry when it disappeared.

Little children are frightened out of their wits at such hallucinations, because they do not know what they are. Older children see them, and are terrified by them, but usually will not admit it for fear of being laughed at, or accused of having over-eaten themselves. Adults see them, and send an embroidered account of the vision to the Psychological Research Society.

Visionary hallucinations do not constitute a special type of night terrors.

I do not believe that night terrors (visionary hallucinations) occur in the best of health, whilst nightmare (troubled dreams) attend chronic ill-health. Both are indications of ill-health, chronic, acute, or temporary, and affecting brain or body, or both.

The recollection or non-recollection of the event are to my mind immaterial.

We forget far more dreams than we remember. As a rule, only those which are most vivid, and which occur just before it is time to get up, remain in our memories. Even these, although they seem absolutely fresh on waking, may be effaced, as it were, in one's morning bath, and cannot be recalled unless some chance association during waking hours revives them. Dreams are most elusive.

Little children are even more likely than adults to forget their frightening dreams. Older children may partly remember them, but shame and shyness, also the probably complex nature of the dream, the description of which is beyond their powers of verbal expression, prevent them from telling us all they know. Hence they may be supposed to have completely forgotten the event. I have often noticed the puzzled, half-amused, half-frightened expression of a child when questioned on the subject of his bad dreams, and have been struck by the difficulty in getting any information from him. I am unable to agree with the statement that the vision in night terrors is always the same, whilst in nightmare it constantly varies. It is impossible, I think, to distinguish

the conditions, and to regard one as serious and the other as trivial on such grounds. The form or shape of a dream becomes largely a matter of habit, and its repetition does not prove that a more serious ailment than an ordinary bad dream is in force. The dream hallucination which has horrified us as children may haunt us as adults till we die. A painful dream may be our last as well as one of our earliest emotional disturbances. It is even possible that, in a critical illness, a distressing though familiar dream may be the actual cause of death. I believe that sudden and unexpected death during sleep, in cases of heart disease or enteric fever, may thus be accounted for. I see no reason for regarding oft-repetition of the same dream vision, or non-recollection of its occurrence, or peculiarity in the vision itself, as indications of a disorder more serious than an ordinary nightmare.

I can recognise no distinctions *per se* between night terrors and nightmare.

But with other statements which have been made I am fully in accord.

Night terrors may be symptoms of the most trivial, or of the gravest import to the patient, and it is therefore desirable to ascertain in every case the condition with which we have deal. In order to do this we must have some definite plan of differentiation—and the simplest and best is, I think, Silbermann's division of night terrors into "Idiopathic and Symptomatic."

I would use the term symptomatic to describe all cases due to reflex disturbance of the brain by local disorders, and idiopathic to include all those of purely cerebral origin. The latter are by far the more important of the two. At the same time, it must be admitted that it is often very difficult to discover the cause of reflex disturbance in a given case, and also that reflex disturbances may be present in cases apparently idiopathic.

In the first place, we must try to find out whether the content or shape of the dream throws any light on its cause.

The content of dreams. In young children, aged from about two to five or six, there is commonly a visionary hallucination, and it is usually a reproduction of something which they have seen, and which has frightened them during the day.

It may be a dog or some other animal, a horrible negro or a sweep. It is usually black, but

may be red. (A somewhat forced parallel has been drawn from this circumstance, between the aura of epilepsy, which is occasionally a sensation of red colour, and night terrors. I believe that the red colour of the vision is simply due to the introduction of light in the room. In dreams during darkness there are no vivid colours.) The vision is seldom, in young children, of an inanimate body, but it may be so. Thus a little boy, aged between five and six, used to wake screaming, "It's the house with the blind eyes." No one knew what he meant till, some years later, he confessed that a house, the windows of which had been blocked up, in order to evade the Window Tax, used to frighten him by day, and appear in his dreams by night. Oliver Wendell Holmes speaks of a certain glover's sign in the shape of a huge hand which had a similar effect on him as a child.

In my own early childhood the visitations took the form of Fifth of November guys. I had lost my nurse, and found myself in a street peopled by monsters clad in black and fiery red fur. Their faces were hideous, and they had the power of looking into nursery windows, and spying out a small boy, even when he got home and hid under the bed or table.

The hallucinations are, however, not only of sight. Dr. Colman mentions a case of a child, aged two, who woke screaming that someone was hurting his finger. He pointed out where the person was, and insisted that the finger was bleeding. Assuming that there was nothing the matter with the finger, we would be justified in regarding such a case as of the idiopathic variety. Again, there is a curious and ominous condition in which the trivial events of the day become converted into distressing dreams by night—just as in adults who are mentally overworked.

Early school tasks, and especially initiation into the mysteries of simple arithmetic, are responsible for many instances of disturbed sleep in children. A common story is that the child is "doing sums in his head all night long."

The children who suffer from this form of night terror are usually precocious and learn without difficulty, but the symptom is an obvious indication of cerebral activity which may soon end in exhaustion. The feeble-minded are naturally more readily exhausted than others. Thus the mother of a partially-imbecile child said to me, "It all came of his having to learn a hymn at school. It took him weeks, and he dreamed of it all night, and he has never been right in his head since." These cases are also of cerebral or idiopathic nature.

Below the age of five or six the dream content is usually simple, and there is seldom any difficulty in divining its nature from the child's exclamations. But later on, as I have mentioned, it becomes more complex, and therefore more difficult to describe. It is not until childhood is past that one learns what the child's sufferings in this respect have been. If we knew their nature at the time, I believe it would be often possible to relieve them, and, for this reason, I will give a few examples of painful dreams which I have learned from others, and have also experienced myself.

Case 1.—A. T—, aged twenty-seven, medical man. The vision took the form of a ball, of no particular colour, and at first small. It quickly rolled towards him, growing to monstrous size, and seemed about to overwhelm him. This ball was apt to make its appearance in the course of any variety of dream. He knew the dream stage at which it was likely to appear, and would make frantic endeavours to wake himself in time to avoid it. He would awake screaming with all his might, but would never confess the reason, only saying, "It was nothing," or that he did not know why he cried. He usually found that he had wetted the bed on such occasions. He would try to keep awake afterwards, for fear the dream should recur. He is of neurotic disposition, markedly myopic, and a great sufferer from migraine.

Case 2.—W. G—, male, aged thirty-eight. A gigantic mazy web or skein, like wool, no particular colour, in constant, intricate, involved movement appeared in the distance, and alternately swooped down upon him and retreated. Its meshes became small and closely entwined as it approached, and expanded as it retired. The terror became acute as the phantom drew near to him. This dream was a constant torment up to ten years of age. It recurred during an attack of influenza in 1892. He is nervous, dyspeptic, myopic, and had frequent attacks of migraine up to the age of twenty-one.

Case 3.—F. A—, aged twenty-seven, medical man. His personality consisted of a head only,

or, at all events, his body was immobile. He was in the midst of a vast, white, undulating plain, on which some dark, indistinct object kept moving in concentric, narrowing circles around him. The terror culminated when the thing passed behind him during its gyrations, and he could not see it, but felt that it was there.

Case 4.—In another form of dream there was a wall of thick darkness in front of him, on which a huge spider, as large as a Newfoundland dog, span an endless web, which somehow threatened to involve him.

In both cases he was always conscious of being in a dream, but the hallucinations and the fear of them continued. He is of highly nervous temperament, and is subject to migraine.

In these examples the prominent feature is an elaborate visual hallucination. The phenomena are purely subjective, they do not represent any objects which could have been actually seen in waking hours, they are therefore distinguished from the early, simple hallucinations which occur in young children.

They frequently occur in those who suffer from migraine, and I would suggest that the hallucination is induced by the visual aura which so commonly precedes an attack of megrim. The so-called Teichopsia, the appearance as of ebullition in objects, and other curious optical illusions are familiar precursors of migraine. In the dream these illusions are converted into hallucinations.

Secondly, errors of refraction are commonly the cause of migraine, and, as we have seen, they are met with in persons subject to the complex visual night terror.

So the apparently long step between night terrors and refraction errors may be bridged over by recognition of the type of night terror to which I have drawn attention.

I have never myself suffered from this particular form of night terror, but another and somewhat similar form has tormented me occasionally since childhood. I may call it the " tidal wave " dream. I am swimming with others in the sea, close to the shore, and thoroughly enjoying myself, when, suddenly, I am alone, and miles away from land, which I can still see, and make strenuous efforts to reach. The water is only a few inches deep, and I cannot swim, but grope along painfully on hands and knees. There is always a horrible still-

ness around, and a sense of utter loneliness. The atmosphere becomes greyish red, and hazy, and I feel as if I could not breathe. I look over my shoulder and see a wall of black wave, towering mountains high, and bearing swiftly down upon me. I awake with a stifled shriek and in abject fright just as the wave is breaking.

I cannot explain the scenery and surroundings, which are always invariable, but I believe that the sense of impending suffocation or drowning is real, and due often to a bad habit of sleeping with my head covered. I have frequently experienced the dream when suffering from nasal catarrh, and for this reason I believe that it is the type of night terror induced by adenoids and other naso-pharyngeal obstructions.

The *mise en scène* may not be the same, but the tenor of the dream is always suggestive of partial asphyxia.

Aural vertigo as a cause of night terrors.—I can trace back to my eighth year a dream that, though wingless, I can fly. The dream is mostly pleasant. I am extremely proud of the grace and agility with which I exercise this unusual accomplishment. But the fate of Icarus soon overtakes me, and I realise the truth of Horace's line, " Mors et fugacem persequitur virum." For after soaring to some precipitous mountain peak or pinnacle, my powers desert me, and I am left clinging there in agonised fear of falling. And fall I do, down, down, through endless space, until I wake, shaken, shocked, and breathless. A medical friend tells me that in his dreams the course of events was the reverse of my own. He would be pursued, and on the point of being overtaken, when the power to fly would come to his relief. Sir William Gowers alludes to the feeling common to most of us, of falling from a height when going to sleep, or just after going to sleep. " I believe," he says, " that it is really slight labyrinthine vertigo due to spasmodic contraction of a tympanic muscle, which suddenly changes the pressure within the labyrinth " (p. 792, ' Diseases of Nervous System,' vol. ii).

He also says, " These attacks may be prevented by a dose of bromide."

Night sweats as a cause of night terrors.—Another and more grotesque dream haunted me, as a child, for many years—I was taken captive by Red Indians, pirates, devils, or masked burglars,

it mattered not by whom, the treatment was the same. I was slowly tickled under the arms whilst quite unable to stir hand or foot, or even to cry out. The process always implied the utmost malignity on the part of my captors, and caused me most exquisite torment. I dreaded it above all others, and knew beforehand in my dream when it was imminent. It was useless to say to myself, as I often did, " It is only a dream," the reality of the sensation persisted. I would wake with the horror full upon me, and pinch myself to avoid falling asleep again, but the instant I dosed my tortures began afresh.

As a child I sweated much at night, and I believe the dream was occasioned by the sensation caused by drops of perspiration trickling down my sides, for in very hot weather, or when the bed-clothes are heavy, I occasionally get it again, with all its horrors unabated.

I have never met another who complained of this form of dream, but not long ago I treated a patient, suffering from acute alcoholism, whose chief delusion was that he was being tickled to death at night by his enemies. " The process," he said, " was well known in the city," and was " carried out by means of electricity." But I thought the delusion was due to his night sweats, which were profuse.

Heavy bedclothes, and the common custom of tucking children up in bed so that they cannot freely move their limbs, may account for this and other forms of nightmare, especially the paraplegic variety. The dream that one is pursued, but cannot run away, is probably due to actual restriction of movements. But another explanation may be offered, namely, that deficiency of oxygen is the exciting cause.

Mr. Glaisher, when at a height of 29,000 feet in Coxwell's balloon, found himself unable to execute any muscular actions, although his volition to perform them remained intact. Paul Bert had a similar experience after exposing himself to low atmospheric pressures in a closed chamber (Marcet, " History of the Respiration of Man," ' Lancet,' vol. ii., 1895, p. 77).

Professor Marcet concludes from these incidents that " the conception of volition does not require oxygen, but the manifestation or response of volition cannot be carried out without it."

If this explanation be correct, the paraplegic nightmare may be traced to deficiency of oxygen occasioned by the atmospheric conditions of the bedroom, or by the physical condition of the patient.

Hence the tenor of the dream may provide a clue to its cause.

Night terrors from febrile disturbance.— These are characterised by visual hallucinations which remain vivid although the child seems wide awake. He may be horribly frightened at them, and beg for their removal, sometimes he is fully conscious of his surroundings, sometimes not. Very young children do not recognise them as hallucinations, but older ones do, and may, if encouraged speak of them afterwards. Young children seem to have forgotten all about them next day.

I have met with a large number of instances of the kind during the recent epidemic of influenza, but they may be occasioned by any febrile disorder, and at once suggest a nightly rise of temperature.

I draw special attention to this fact in order to show that the hallucinations of vision which have been regarded as of extremely ill omen, are not of necessity so. Yet they indicate ill-health.

Actual pain as a producer of symptoms of night terrors.—Here the tenor of the dream cannot, as a rule, be ascertained. Night screams may result from tooth-ache, ear-ache, stomach-ache, hip disease, calculus, and other painful disorders. The scream of pain can usually be easily distinguished from that of terror. The pain wakens the child, and lasts long enough for him to indicate its site.

But this is not always so, the Matron of the Children's Hospital, Miss Anderson, a lady of great experience, tells me that children suffering from hip disease, who wake screaming at night, seldom complain of being in pain. Probably the pain in such cases is not severe. Very slight uneasiness is sufficient to set up the most weirdly terrible dream. I have often dreamed that all my teeth were falling out, and my face rotting to pieces, and have awaked to find slight uneasiness in the jaws, probably due to grating the teeth. Suspicions of hip disease or calculus always lead to inquiry as to night screams, but night screams do not usually arouse suspicion of

hip disease or calculus. Yet the possibility of this cause and effect should be borne in mind.

I have met with a few cases in which balanitis, phimosis, and vulvo-vaginitis seemed to cause night terrors, usually accompanied by wetting of the bed. But I have thought in such cases that masturbation, consequent on irritation of the genital organs, probably accounted for the disturbed sleep. Irritation of the urethra by abnormally acid urine will, I think, give rise to the same train of symptoms.

Quite recently a child was brought to me on account of night screaming and the habit of masturbation. I found the urine highly acid, and the vulva red and irritable. A few doses of alkalies and bromide put a stop to both symptoms.

Intestinal worms.—Parents are fond of attributing night terrors and symptoms of all kinds to the presence of lumbrici or oxyurides. Often the parasites produce no symptoms whatever, and one does not know whether a worm has been harboured or not, until one sees it in a bottle. But I have certainly met with cases of obscure abdominal pain, irritability, and night screams which have ceased after the expulsion of round or thread worms. .

Dr. Still ('Brit. Med. Journ.,' April 15th, 1899) has drawn attention to catarrhal appendicitis in children, due to the presence of oxyurides in the vermiform appendix, and this condition might give rise to reflex cerebral irritation.

Difficult and delayed dentition in young children will often occasion febrile disturbance accompanied by nocturnal screaming.

Gastro-intestinal affections.—These necessarily arise in the minds of all as causes of night terrors. Yet, I fancy, too great prominence is usually given to them in this connection. I do not deny that an indigestible meal will often cause a nightmare, but inveterate and long-standing dyspepsia is not necessarily associated with night terrors, although often coincident. Moreover, when so associated, it will be frequently found that night terrors do not subside under treatment for the dyspepsia. Hence I think that the dyspepsia may be due to the general perversion of the brain, which gives rise to the night terrors. The dyspepsia is, in fact, a neurosis. Thus night terrors in this class of cases

must be of the idiopathic variety, to which I must now draw attention.

Idiopathic variety.—So far I have chiefly dealt with the reflex or symptomatic variety of night terrors, and have given examples of those which seem to be due to ocular, aural, nasal, faucial, gastro-intestinal troubles, and also of those dependent on close bedrooms, heavy bedclothes, and position during sleep. Cases have been incidentally mentioned of others in which the affection seems purely cerebral or idiopathic. In these there may be harassing repetitions of sights seen, or events which have happened during the day.

No local or general conditions of ill-health may be apparent. They may be actually absent. Yet it must be remembered that the sufferers from the idiopathic and from the symptomatic variety of night terrors are equally liable, at one time or another, to local or general morbid conditions, so there is no permanent distinction between the two. The real difference is that the effects are more severe and frequent, and are less relieved by local treatment in idiopathic than in symptomatic cases. In the idiopathic variety the patients are neurotic from the cradle, and they come of a stock of neurotic ancestors.

Unusual timidity is often an early sign. Little infants will start, tremble, and scream at a noise at which ordinary children would be unconcerned. The approach of a stranger, the sight of everything which is new to them, excite, not the normal curiosity of a child beginning to take notice, but wild screams of unreasonable alarm. Mothers of little children in arms have told me that they dreaded to take them out because they became so frightened at everything they saw. They are peculiarly liable to infantile convulsions. This unnatural timidity persists as the infant grows into a child. It often takes the form of shyness and morbid self-consciousness; he will not associate with other children, or take part in their games, and he looks bewildered and anxious at the noise they make. He prefers the society of adults, and soon acquires a precocity and old-fashionedness which make him unpopular in the nursery and with his schoolfellows. From sheer timidity he may become untruthful, and his character is thereby lost. He

often gets shamefully teased and bullied, but bears it all with stolid patience until his wrongs have accumulated, then some trivial annoyance becomes the last straw, and he bursts into ungovernable and almost maniacal passion. He may become reserved, morose, jealous, and spiteful, he does not respond to kindness because he is always brooding over his fancied or real slights and grievances. Yet he is often a prey to agonies of remorse for all his misdoings, real or supposed. His dreams are of the Judgment Day and hell. His digestion and general health suffer, and he is apt to become melancholic, or it may be, suicidal, hysterical, choreic, epileptic, or even maniacal. In others, timidity takes the form of most highly imaginative superstition. Their thoughts run on ghosts, witches, and death. All subjects which are terrible and uncanny, fascinate them. They will pore all day over Fox's "Book of Martyrs," or the dreadful pictures in some editions* of the "Pilgrim's Progress," and dream of them all night.

I cannot give a better illustration of the night terrors thus excited, than that contained in Charles Lamb's essay on "Witches and other Night Fears."

He says, "There was a picture too of the witches raising up Samuel (in the history of the Bible by Stackhouse) which I wish I had never seen . . . I was dreadfully alive to nervous terrors. The night-time and solitude and the dark were my hell . . . I never laid my head on my pillow I suppose from the fourth to the seventh year of my life—so far as my memory serves in things so long ago—without an assurance, which realised its own prophecy, of seeing some frightful spectre. Be old Stackhouse then acquitted in part if I say, to this picture of the witch raising up Samuel (O! that old man covered with a mantle!) I owe, not my midnight terrors, the hell of my infancy, but the shape and manner of their visitation. . . . All day long, whilst the book was permitted me, I dreamed waking over his delineation, and at night (if I may use so bold an expression) awoke into sleep, and found the vision true. I durst not even in the daylight enter the chamber where I slept without my face turned to the window, aversely from the bed, where my witch-ridden pillow was."

In my own early days I shared Lamb's horror of this particular picture, and it contained a rampant skeleton horse, which, to my mind, rendered it peculiarly aggravating. I can remember being awakened by a younger brother screaming shrilly that "Satan's feet were dangling outside the window." Our nurse attributed the vision to what she called "gormandising," but I knew a picture of Christian in the Valley of Death, standing prayerful, with a full-sized devil grinning over his left shoulder. The devil's feet were long and black, with disgustingly uncut nails, and they projected from behind Christian's back. Like my brother, I had seen them in my dreams, but, being older than he, I held my peace. It is interesting to note that Lamb ascribes the form, only, of his dreams to the picture which haunted him. Children such as he—and there are many—are not altogether dependent on what they see or hear for the scenes in their dreamland theatre.

The late Harold Frederic said ('Illumination,' p. 221) of children: "They have terrifying dreams of awful monsters and giant animals of which they have never so much as heard during their waking hours." Nurses' tales and awful pictures are but matches which fire the train of imagination.

Many children share with savage aborigines the superstitious dread of the unknown. As Oliver Wendell Holmes said, "They will believe everything that is taught them, and a great deal more which they teach themselves" ('Autocrat,' vol. i, pp. 103–5).

Not long ago I heard of a lady who, in her desire that her children should learn nothing but what is true, banished fairy tales from her nursery. But her children evolved from their own imagination fictions which were so appalling that she was glad to divert them with 'Jack-the-Giant-Killer.'

Doubtless nervous and highly imaginative children are more liable to aggravated and oft-repeated night terrors than those who are placid and commonplace. Little Ned who, "when sent to bed, went without a noise," was probably as stolid as he was healthy, whilst "the young Augustus Edward, who reluctantly went bedward," had excellent though unexplained reasons for his reluctance.

The characteristics, then, of neurotic children who are specially prone to night terrors, are timidity, shyness, and self-consciousness. These may lead, if the children are mismanaged and misunderstood, to highly imaginative superstition, or, worse still, to melancholy and discontent, which sometimes culminate in acts of apparently flagrant immorality.

Soon or later, general health becomes impaired. Chronic dyspepsia, the "habit forms" of chorea, hysteria, hystero-epilepsy, epilepsy, and even mania, are met with in such cases—and from this class are derived the neurasthenics and hypochondriacs who haunt our consulting rooms and hospitals in after life.

A few illustrations of these and other accompaniments of night terrors may now be given.

Day terrors.—In certain cases exactly the same symptoms occur by day as by night. Henoch mentions two such instances—one had hallucinations, the other would shut his eyes, stop his ears, cling to his mother, crying, "I'm afraid!" The duration of the attacks was only a few seconds. Naturally these attacks are most frequent in idiopathic cases, yet even in them a reflex cause may be at work. Henoch's description of the symptoms in the second case suggests the occurrence of vertigo.

The following is a case of "day terror," or delirium produced by pediculosis capitis: I once saw with my colleague, Dr. Leslie Ogilvie, a girl, aged nine, who was said to have gone out of her mind during the night. She was sitting in bed at mid-day, flushed and wide-eyed, and was screaming madly of "black dogs" and "men under the bed." We had her removed to the hospital—she lived close by—and then found that her head was swarming with pediculi. These were attended to, and a few hours later she recovered her senses. Unfortunately her parents were so much incensed next day to find her hair had been cut, that they removed her, and I know nothing of her subsequent history.

Night and day terrors.—Another instance of a night terror becoming prolonged into a day terror is as follows: I was once asked to see a boy, aged eight, under treatment by Mr. Watson Cheyne for spinal caries at the Children's Hospital, Paddington Green. He had had an abscess, and his temperature had been hectic for a considerable time. On the night before I saw him he awoke at 9.30 screaming, "Robbers! Murderers!" He hid his head under the bed-clothes, and, when uncovered, bit and tore at everyone who approached. He recognised no one, but listened intently to the slightest sound, fancying that robbers were coming to murder him. When I saw him next day he was still full of the same delusions. He insisted that the whole of the hospital staff had been murdered, and that his attendants were burglars dressed up in nurses' clothes. He refused food on the ground that it was poisoned, and spat in all directions for several hours at a time. (Hughlings Jackson refers to this symptom in cases of epilepsy, and attributes it to a crude sensation of taste) (Crichton Browne, "Dreamy Mental States," 'Lancet,' vol. ii., p. 3, 1895). He was alternately noisy and dull, muttering, "thunder and lightning" to himself. (There had been a thunderstorm on the day that his attack commenced.) The condition of mania, with delusions, lasted for three days, and then gradually subsided. I attribute it to fever mainly, but possibly the thunderstorm was the exciting cause of a prolonged night terror.

This boy was always odd and eccentric during his stay of many months in hospital, but had no further symptoms of insanity.

Maniacal screaming in children, in some cases, seems to be a form of day terror. It is not an uncommon symptom in young children of highly neurotic temperament and antecedents. Care should be taken not to regard it as a mere fit of passion in a naughty child. The attack occurs without any apparent cause; it is much more violent and prolonged than an ordinary fit of passion, it is quite uncontrollable, and no tears are shed by the child.

I have met with several instances of the kind, and have been led to associate the symptom with chronic constipation, due to atony of the bowel. Yet such cases are strictly idiopathic.

Relation of night terrors to epilepsy.—There can be no doubt hat epileptic subjects may also suffer from night terrors. But I cannot agree that there is any necessary connection between the two—or even that there is any marked resemblance between the symptoms.

It is true that hallucinations of vision are at

times the aura of an epileptic fit, and that some-
times the colour of the aura is red. But, in my
experience, hallucinations of sight in epilepsy are
decidedly rare, whilst they are extremely com-
mon in night terrors. The red colour of the
vision, on which stress has been laid, is, as I
have previously mentioned, probably only due to
sensation of light. It is curious that non-recol-
lection of the circumstances should be regarded
as evidence of a parallel between night terrors
and epilepsy, considering that we should never
know what the subjective aura of an epileptic fit
was like, unless the patient told us.

Yet the aura of epilepsy may take the form of
a night terror. An epileptic girl, now under my
care, dates her fits from a carriage accident oc-
curring seven years ago. She tells me that she
invariably seems to live through the accident
again whenever she has a fit. But for this she
would not know when she has one.

Narcolepsy and night terrors.—I have met
with this association in one case. A boy, aged
twelve, of highly neurotic family history, after an
attack of influenza suffered from headaches and
somnolency. He would fall asleep suddenly in
the midst of a meal, or whilst dressing or un-
dressing, or at any other inconvenient time.
Once he slept from 3 p.m. until 11 a.m. the next
day. After an ordinary night's rest, he would
sleep steadily through the forenoon or afternoon,
if allowed to do so. At first sleep was natural,
but later on it was disturbed by screaming, mut-
tering, and violent struggling, somnambulism,
slowness, and irregularity of the pulse. Once he
split his nightdress from top to bottom, and
overset the table by the bedside during the night,
but had no recollection of what had occurred
next day. The attacks of sleepiness, at first in-
frequent, became of common occurrence. In the
intervals he seemed well at first, but gradually his
moral nature changed, and he went through what
his mother called " a phase of quite grave deceit-
fulness." He became timid, and afraid of the
dark. He had no actual epileptic fit, but was
subject to sudden attacks of convulsive, grasping
movements of the right hand and twitchings of the
right side of the face. All these alarming symp-
toms disappeared after removing him from
school, and sending him to vegetate in the
country for eight months. An elder brother

of his, after gaining a scholarship at a
public school, suffered from fits of daze
or giddiness, with other symptoms of grave
cerebral exhaustion, whenever he worked for
more than a few minutes at a time. He always
improved after a few weeks' holiday, but return
to school work produced so many relapses that
the parents wisely gave up all attempts at or-
dinary education. He was sent to do out-door
work on a farm for two and a half years. This
effected a complete cure, and he is now a lec-
turer on scientific agriculture, and professional
associate of the Institute of Surveyors.

His brother shows promise of becoming a
distinguished electrical engineer.

These cases, given in the barest outline, il-
lustrate the dangers of routine school work in a
certain class of neurotic children, and the advan-
tage of finding out other occupations which cause
them the least mental strain, and are likely to
make them useful members of society.

Whilst on this subject, I might mention two
other cases in which school work or school life
produced disastrous effects on children neurotic
by nature or inheritance.

A school-boy, aged twelve, had undoubtedly
epileptic fits. They occurred only during term-
time. He had previously been fond of, and well
up in, his work, but now he took an inveterate
dislike to school, and gradually became unman-
ageable both at school and at home. He defied
all authority, he lied and stole, and made a
ferocious attack on a brother for no reason that
could be ascertained. His behaviour was so bad
and eccentric that I thought he must be insane,
and his parents thought so, too. However, by
way of experiment, and to keep him out of mis-
chief, they sent him with an older brother, who
had more control over him than anyone else, to
work at a tobacco factory. He at once took to
the work, became perfectly docile, and gave no
trouble, except for occasional passing moods of
obstinacy and self-will. He had no epilepsy for
three years, until a fit occurred last summer
(1898) after exposure to the sun during the heat-
wave; otherwise his health had been perfect.

The second case is that of a school-girl, aged
thirteen, recently under my care at the Hospital
for Paralysis and Epilepsy. For five weeks she
had had apparently epileptic fits of almost daily

occurrence. From her scared, furtive expression and shrinking demeanour on admission, it seemed probable that some mental trouble was at work. She soon told one of the nurses that her schoolmates teased her, and that the mistress had boxed her ears, and she begged that the doctor would forbid her being sent to school again. But for school, she said, she would not have had fits. On being reassured on this point, she soon became cheerful and contented, and the fits entirely ceased. She is a demure, thoughtful, and well-behaved little person, with precocious maternal instincts. I do not doubt that the indignity to which she had been subjected at school was sufficient to destroy her self-respect, prey upon her mind, and to produce the fits.

These are the cases in which the School Board authorities, who sagaciously ordain that if children are well enough to work, they are well enough to attend school, should be defied.

A final case may be mentioned in which hystero-epilepsy, hysterical paraplegia, night and day terrors occurred. This was a boy, aged fourteen, who came under my care at the Hospital for Paralysis, in the absence of my colleague, Dr. George Ogilvie. He had been subject to fits for ten years when I saw him, and had hysterical paraplegia for one week. The latter soon passed off, but he had from two to ten fits daily of hystero-epileptic character. During the seizures he often screamed and struggled as though frightened, and trying to escape from some terrifying vision. One afternoon I found him in a state of acute delirium, perpetually leaning out of bed, first on one side, then on the other, peering underneath it, and crying, "There he is! there he is! He'll bite me! he'll bite me!" Then he would go through the action in admirable pantomime, of seizing some imaginary being, throttling and tearing it savagely with hands and teeth, screaming meanwhile triumphantly, "I've got him!" and "Say your prayers!" over and over again. He did not appear frightened, but intent on capturing his tormentors. He was quite unconscious of bystanders. This condition lasted with intervals of sleep for nearly thirty hours. Then he asked for food, and seemed in his right mind, but was under the impression that it was still the previous day. He told the nurse that he had been having bad dreams of dogs and monkeys, and that two years previously a monkey frightened him by jumping on his shoulder and pulling his ears; since then, he said, he often dreamed of the incident. This boy ultimately became violent and suicidal.

Treatment in general.—So far as symptomatic night terrors are concerned, treatment is sufficiently indicated by discovery of their cause. When it is removed the night terrors cease. In idiopathic cases we cannot remove the primary cause, which is the neurotic temperament of the patient, but we can seek for, and alter, the conditions which aggravate it. These may be the same as those which produce the symptomatic variety. But in idiopathic cases their removal may not constitute a cure, although their non-removal prevents it. The removal of adenoids, for instance, or the correction of refraction errors, or the treatment of indigestion, in neurotic children will not avail if the patient's environment be ignored. So treatment in idiopathic cases must have reference to the child's studies, thoughts, occupation, and companions—as well as to local causes of ill-health.

No general principles or special rules can be laid down for the treatment of neurotic children, nor for that of the night terrors, visions, hallucinations, nor for the misconduct, falsehood, evil passions, acts of cruelty and immorality, which are but symptoms of the neurosis which besets them. But, in individual cases, by using our wits, we may discover causes for such conditions, which parents and guardians have deliberately or unintentionally concealed.

In the powerful, early chapters of 'Jane Eyre' there is an account which seems drawn from life of a neurotic child who, smarting under a long course of injustice and oppression, retaliates on her persecutor, and is punished by being shut up alone in a dark room. The result is a fit of apparently hystero-epilepsy, in which the child has visions of "something all dressed in white, with a great black dog behind him." The doctor who is called in shrewdly divines that he is being misled as to the cause of the attack. By tactful cross-examination he soon gets to the truth of the matter, and Jane Eyre is indebted to him for removal from surroundings which she says, "gave my nerves a shock of which I feel the reverberation to this day."

It has fallen to my lot, and probably to that of many others, to meet Jane Eyres, both male and female, in practice.

In such cases tact and discretion are necessary, otherwise we shall only give offence to the parents, and do no good to the child.

I knew an emotional child whose life was made miserable by the tyranny of an ignorant and vulgar nurse. But the parents for a long time regarded the woman as a perfect treasure, in the nursery, because she had been overheard teaching the child a prayer.

We must be on the watch for the irritating effects of home life as well as of school life in neurotic children, and must endeavour to counter-act them.

With regard to over-pressure, a common cause of nervous breakdown in children, it should be remembered that the term is relative to the mental and physical capacity of the subject. A light task to one is heavy to another. A light task is rendered heavy by physical deficiency, no less than by mental incapacity. For instance, I have already alluded to errors of refraction as producers of certain forms of night terrors and migraine. They may also lead to mental over-strain. In many schools the memory is trained by the visual method. This is excellent for those whose vision is normal, but in others who cannot see clearly it implies over-use of other faculties. A figure in Euclid chalked on a black-board is no help to a boy who cannot, at a distance of a few feet, distinguish the letter A from B. He has to learn the proposition by heart beforehand, and usually breaks down in class, and is punished for idleness or obstinacy. He is usually too timid to offer the legitimate excuse; often he is quite unaware that his class mates see better than he does. Eye strain often means mental strain in children.

As to the management of cases like his own, Charles Lamb says, "Parents do not know what they do when they leave tender babes alone to go to sleep in the dark . . . the keeping them up till midnight, through candle-light and the unwholesome hours, as they are called, would, I am satisfied, in a medical point of view, prove the better caution."

We cannot altogether endorse Charles Lamb's proposed method of treatment, but can agree with him as to the cruelty and senselessness of ignoring the mental torture which darkness inflicts on an imaginative child.

The assurance that unseen powers are watching over it is but small comfort compared with that afforded by a simple night-light.

I have heard of a child who, when told that she need not fear the dark because " God would be with her," said, with innocent profanity, " I wish you'd take God away, and leave the candle."

Had Charles Lamb's early fears been recognised and allayed, he might have become a healthier and happier man without in any way impairing his genius. I am sure that the mental sufferings of childhood leave dark traces on character and health which are never effaced in after life. In former days doctors were seldom consulted about neurotic children who evinced immoral propensities. Ill-behaviour in such children was regarded as deliberate wickedness, and punished accordingly. But we are frequently consulted nowadays in cases of supposed juvenile moral insanity. Parents are even apt to look for Lombroso's stigmata, and Nordau's types of degeneracy in their offspring who have been guilty of some escapade, and they will come to us to have their suspicions confirmed. In a very few cases their suspicions prove correct. But in the majority we find that ennui or boredom, parental negligence or coldness, or some unfavourable conditions of the home or school circle, have rendered the child discontented and unhappy, and have occasioned the outbreak. Under more favourable conditions a moral and physical regeneration takes place.

The use of drugs.—In all kinds of night terrors nerve sedatives are useful. Even in the most straightforward of symptomatic cases, it is as well to give a sleeping draught for a few nights after an attack has occurred, for oft-repeated attacks tend to make a child timid and nervous although by nature he is not so.

In symptomatic cases I usually give paraldehyde in doses of 15 to 20 minims for a child of five. In idiopathic cases the bromides are indicated. The bromide of ammonium may be combined with other drugs, such as Ferri et Ammon. Cit., in anæmia; with bismuth, gentian, rhubarb, castor oil emulsion, in gastro-intestinal troubles; or with strophanthus, digitalis, citrate

of caffein, when cardiac stimulants are needed; or with nux vomica and hypophosphites, emulsion of cod-liver oil, in debility. Quinine is not usually good for highly neurotic children. When given it should be with hydrobromic acid.

When there are no special reasons for such combinations as the above, the mixed bromides of soda, potash, and ammonium may be given in suitable doses. I usually treat markedly neurotic children as if they were epileptics, with a long-continued course of mixed bromides.

I have never seen any harm result from the practice so long as the dose was not excessive, and care was taken to add stomachics, or tonics, or arsenic, in cases of acne, when required.

Summary of Argument.

(1) Night terrors are always to be regarded as evidence of ill-health.

(2) They may for convenience be divided into those of symptomatic and idiopathic origin. But *per se* the symptoms of the two cannot be distinguished.

(3) Hallucinations of vision are usually due to febrile disturbance.

(4) The content of the dream may, in some cases, throw light on its cause.

(5) The character of the dreamer is of more importance than that of the dream.

(6) In simple cases, simple treatment based on the cause suffices.

In idiopathic cases, not only local causes of irritation, but the environment and nature of the patient have to be considered.

ACUTE INFECTIONS DUE TO UNSOUND MEAT.

BY

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ACCORDING to the old proverb, preventive medicine should be better than therapeutic, when it is successfully carried out. It is necessary, however, to know something about the life of the infective agent during its sojourn outside the human body,

before it is possible to take steps in effective preventive hygiene. In cases where the infection can be traced back to certain diseases in particular animals, there is much more promise of successfully combating a given infective disease than is the case where the materies morbi is supposed to be carried about in the air or some such vague method.

It has been recognised for many years that certain forms of severe illness could be traced to the consumption of particular samples of meat. Nearly twenty years ago it was pointed out by Bollinger that these outbreaks were due to the consumption of meat derived from diseased or unsound animals; before, and, indeed, for a good many years after Bollinger, it was commonly supposed that the meat was in a more or less putrid condition, and that substances were formed in it by putrefactive germs which were endowed with poison-producing properties. Poisons were isolated by chemical means, and found to belong to the group of bodies known as alkaloids; hence arose the generic term, "ptomaine poisoning," a term which is still used occasionally even now. During the last ten years our knowledge concerning these outbreaks of illness has been placed upon a more exact footing. This is due to careful bacteriological investigation. Out of the number of observers who have contributed to our knowledge in this manner, I may mention the names of Gärtner, who was the first to isolate and describe a new and characteristic bacillus as the cause of the illness, and of Professor van Ermengem, who has dealt with more epidemics than any other author, and who has not only described the nature of another specific organism, but who confirmed the presence of Gärtner's bacillus in a number of outbreaks. At the present time these two microbes, that of Gärtner or Bacillus enteritidis, and that of van Ermengem or Bacillus botulinus, take the foremost place in the list of causative agents of meat-poisoning. Besides these bacilli, several others have been described as having given rise to illness, and many of these are of the nature of putrefactive bacilli—proteus, &c.—and are not certainly to be identified with the causation of the illness, for the materials were often investigated at a late stage, when putrefactive changes had already set in. In a piece of liver from a person dead of enteritidis infection, at first the B. enteritidis

far outnumbered all other organisms; when I re-examined the material at a later date only proteus bacilli could be discovered. Here it is to be observed that meat that is dangerous is by no means putrid, indeed, it may be quite good in appearance and in smell. It is commonly believed that these infections occur only in hot weather; however, reference to the literature of the subject shows that outbreaks may occur at any time of the year. For instance, one of the epidemics which I investigated occurred in January, whilst others have taken place in the autumn and spring. However, the warm season is not without import-ance, for it encourages the growth of bacilli, and a joint of meat, which contains only a few bacilli, may become dangerous when it has been kept for a period which would not have made it so in colder weather. A crucial test of this is to be found in the *experimentum in homine,* which was made by Poels and Dhont, in Holland, with the flesh of an artificially inoculated ox.

INFECTIONS BY THE BACILLUS ENTERITIDIS.

In " meat poisoning," the bacillus enteritidis of Gärtner is by far the most important organism, for already a very large number of outbreaks have been found to be due to it, and from the records of many of the earlier outbreaks, extending over several thousand cases of illness, with a death rate varying between 1 in 200 and 1 in 5, were very probably due to the same cause.*

Clinically, two types of fever may be distin-guished, the one cholera-like, and the other typhoid-like. Vomiting and diarrhœa are usually the two most prominent objective symptoms; very characteristic also is the extreme collapse, and the slow restoration to health and strength when re-covery occurs. Lung affections (pneumonia), ex-anthemata, and other symptoms have been special features in certain epidemics. Relapses are com-mon, so that the acute stage of the illness, instead of lasting only five or six days, may go on for as many weeks. In respect to the similarity to en-teric fever, it is interesting to observe that the lesions noted at autopsies have not infrequently been described as those of an " early stage of en-teric fever " (swollen Peyerian patches, &c.); a

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* A series of short reviews of forty-two outbreaks will be found in Kobert's ' Lehrbuch der Intoxicationen,' p. 710, Stuttgart, 1893.

certain amount of suspicion may be entertained about some of the recorded cases of " enteric fever without intestinal ulceration," for the Bacillus en-teritidis closely resembles that of enteric fever in many respects. It can, however, be readily distin-guished by its power of fermenting grape-sugar at the body-temperature, as well as by means of a number of other tests.

Attention may now be drawn to the evidence that the illness is due to an actual infection with living bacilli, and not simply to the formed bacterial products, and also that it is communicated by the flesh of diseased animals. Ballard came to the conclusion that the illness was of an infective nature, but he did not trace out connections with disease of the meat-supplying animals, as Bollinger had previously done. Since Gärtner made the discovery of the Bacillus enteritidis in the flesh of a diseased cow, and in the organs of one of the persons who died in consequence of eating the flesh in a more or less uncooked condition, similar results have been obtained in a considerable num-ber of instances. In a further number of out-breaks the same bacillus has been found in the organs of fatal cases, whenever search has been made for it sufficiently soon after death. The demonstration of one and the same specific or-ganism in the diseased meat, and in the organs of those who died from consuming it, forms a satis-factory proof of the notion of " intestinal sepsis," enunciated by Bollinger in 1881.

In connection with many of the epidemics, it has been shown that persons who partook of meat in a properly cooked condition were unaffected, whilst those who consumed uncooked or partially cooked meat became more or less severely affected. In this country the consumption of meat in the raw condition is not so common as is the case in some other countries, where uncooked sausages are very largely eaten. Until, last year this bacillus had not been described in England, nevertheless, outbreaks of this infection do occur in this country; indeed, I have myself isolated the bacillus from the organs of a fatal case in an epidemic affecting nearly two hundred people; and, more-over, by means of the methods of serum-diagnosis, I have shown that three other epidemics were due to the same cause. All these four outbreaks oc-curred between January and August of last year. The origin of most outbreaks has been traced to

beef and to veal obtained from sick animals suffering from puerperal fever, metritis, septicæmia, pyæmia, or diarrhœa, respectively.

It appears that infective conditions are rather common in cows, as a result of uncleanly treatment when calving. It appears that the milk may be the means of communicating the disease; happily, however, milk secretion is arrested for a while. Calves are apt to become ill with some septicæmic disorders, of which many die; the same is said of young pigs. The actual nature of these infections has not yet been satisfactorily worked out; it is, perhaps, significant that Thomassen has isolated a bacillus from sick calves, which apparently belongs to the enteritidis group of organisms. Schneidemuhl thinks that some of these disorders are due to the Bacillus botulinus, which is dealt with later.

Although the flesh of other animals (pig, horse, and goat) has been found at fault, as yet we do not know very much about the distribution of the bacillus in nature. It is significant, perhaps, that the Bacillus enteritidis of Gärtner is extremely like a number of other bacilli, which may, in fact, be considered as varieties which should be included in one group; some confusion has arisen, in that some of the bacilli have been placed amongst the bacteria of "hæmorrhagic septicæmia," whilst others have been grouped amongst the Bacillus coli-like organisms. Of these, the hog-cholera bacillus of Salmon and Smith, and the Bacillus typhi murium of Lœffler may be particularly noticed (Theodore Smith insisted on their similarity to Gärtner's bacillus many years ago). In a recent paper by Voges, the author finds cause for congratulation, in that hog-cholera has not, as yet, been introduced into Germany, yet the Bacillus typhi murium may be described as a marketable article, cultures of which can be obtained to distribute upon bread, &c., for the purpose of destroying plagues of mice. Under any circumstances, such a use of living microbes can only be considered as a form of playing with edged tools, but here the moral seems more pointed. It is to be hoped that the seeds of disaster have not already been sown. It is also interesting to note that one of the outbreaks in Germany (in which B. enteritidis was found) was traced to a pig.

There are many points of interest and importance which still remain to be cleared up. For instance, we do not know what degree of immunity is conferred in man by a single attack. It is, however, not probable that so effective an immunity is acquired in this disease as is the case in enteric fever, for in any subsequent exposure to infection, a considerable dose of highly virulent material may be consumed; acquired immunity is only of relative value, for we do not know any instance where it does not break down when a sufficient dose of sufficiently virulent material is introduced. In the case of enteric fever, probably only a few of the specific bacilli are taken at any given time of infection, so that by means of a slight degree of acquired immunity, we are able to deal successfully with them; as has already been stated, the contrary is probably often the rule in the case of enteritidis infections. The Haffkine plague prophylactic injections may be cited as an illustration, although they are usually effective in fending off the disease as it is acquired naturally, yet to judge by the recorded cases or accidental and fatal infection by cuts at *post-mortem* inspections of plague corpses, it is not effective in the face of such direct infections. Generally speaking, the debates which have been raised as to whether it is possible for second attacks of syphilis to occur, are absurd from the bacteriological point of view, according to which such attacks are always possible, given that a sufficient amount of a sufficiently virulent material is introduced.

In regard to enteritidis immunity, there is a further problem of interest, for we know from experimental work that a certain degree of mutual immunity is demonstrable between this bacillus and the typhoid bacillus. We know that in any typhoid epidemic a number of persons escape the infection; it is not impossible that in some cases an enteritidis immunity may play a part, for these infections are probably far more common than has been established at present.

At present further knowledge is wanted of sporadic cases of these infections in man. From the occasional resemblance to enteric fever, it is not impossible that cases which are regarded as enteric fever, may sometimes be of the nature of infections with the Bacillus enteritidis. Owing to the method initiated by Gruber, we have a means of determining which of the two diseases is present, for, by testing the blood serum in a series of dilutions upon the two forms of bacilli, we can differentiate between them. Unfortunately a French observer introduced a routine for the performance of the test in low dilutions, which are not even beyond the limits of action of some normal serums, and this has been too rigorously adhered to. This is the more regrettable in that the serum of enteric fever patients, or convalescents, has clumping effect upon the B. enteritidis, and conversely the serum of persons who have been ill with infection by B. enteritidis has effect upon the typhoid bacillus, unless certain dilutions are exceeded. I have advocated the routine employment of a graduated series of serum dilutions, which are then tested upon a considerable variety of different races of bacilli, in this

wise it is possible to make a differential diagnosis between the two diseases. Recently my observations have been completely confirmed by Dr. de Nobele (working in the laboratory of Professor van Ermengem) ; from his examination of the serum of persons who have suffered from the enteritidis infection, he comes to the conclusion that in order to establish a diagnosis of enteric fever, reaction must be obtainable in dilutions above 1 in 50. In the serum obtained from the epidemic of enteric fever at Lynn, I found that in two cases the reactions pointed to the infection being due to the Bacillus enteritidis; also, in the Belfast typhoid epidemic, Lorrain Smith came across a case from which this bacillus was isolated. With more care in the way in which the serum test is performed, we may confidently await further light upon the differentiation of these diseases and their relative prevalence in sporadic form. The nature of the illness which is occasionally caused by the consumption of shell-fish is, at present, more or less mysterious, and I should be extremely obliged to any of my readers for timely information or for material from outbreaks of this nature. (For notes on obtaining material at *post-mortem* examinations, &c., see my paper " On the Present Knowledge of Outbreaks due to Meat-Poisoning," ' Brit. Med. Journ.,' December 17, 1898.)

ILLNESS CAUSED BY THE BACILLUS BOTULINUS.

The only account we have as yet of an outbreak, which has been proved to have been caused by this organism, is due to its discoverer, Professor van Ermengem. The symptoms of the illness, however, are so characteristic that this author has been able to collect a number of accounts of other outbreaks, which were probably due to the same or some similar microbe. This disease or botulism is quite different in its nature from the disease which we have just been discussing. The Bacillus enteritidis acts largely by its great power of causing a general infection, whilst the Bacillus botulinus belongs apparently more to the toxic type of disease germs, like that of tetanus. The outbreak in which the B. botulinus was discovered occurred amongst the members of a musical society, who supped together; the incriminated victual was a ham. The remains of the ham, and the organs of one person who succumbed, were submitted to bacteriological research; from both of these sources a new bacillus was isolated. This bacillus is only able to grow in the complete absence of free oxygen; it is able to form spores, which, however, are less resistent to heat than the spores formed by many other bacteria. The most important point is its faculty of producing a most intensely poisonous body, which is readily destroyed by heat, and is similar in its nature to the toxins formed by the diphtheria and tenanus bacilli; the power of the poison may be judged of by the fact that o.oooi c.c. is a certain fatal dose by subcutaneous injection in rabbits. From the fact that the bacillus is to be found in the organs (spleen, &c.) of the person who was fatally affected, as also of experimentally-fed animals, it is clear that here we have not to deal with a simple intoxication with the poisonous products. The effects produced in the disease point especially to affection of the nervous system; in consequence of this, Professor van Ermengem had attention paid to the central nervous system in the experimental animals. It was found that there was an extensive " chromatolysis," or destruction of Nissl's granules in the nerve-cells, and it is pointed out that in future outbreaks heed should be paid to the histological changes in the central nervous system.

I quote the following summary of the clinical symptoms from van Ermengem : —

1. Arrest or hypersecretion of the salivary or buccopharyngeal glands. (The collection of thick mucus in the nasopharynx was a characteristic and very distressing symptom.)

2. Ophthalmoplegia externa; ptosis, mydriasis, paralysis of accommodation, diplopia, and internal strabismus.

3. Dysphagia, aphonia, intractable constipation, and retention of urine. (Vomiting was very troublesome, in a few cases there was some diarrhœa.)

4. General weakness of the voluntary muscular system.

5. Absence of fever, and of disturbances of sensation and intelligence.

6. Disturbances of the circulatory and respiratory systems are of frequent occurrence, and may lead to death by bulbar paralysis.

7. Incubation period is not less than twelve to twenty-four hours. Gastro-intestinal trouble may last for several weeks.

It is to be noted that not only does proper cooking destroy the bacillus, but that a proper amount of salt in the pickling brine (10 per cent.) will certainly prevent the growth of the bacillus, for a strength of 6 per cent. is sufficient to do so.

I should add that Kempner and Pollack have prepared an efficient antitoxin for the botulinic poison; perhaps, some day this will be used in the service of man.

It should be always kept in mind that the only way to establish our knowledge of diseases of this nature is to take prompt action, in order that bacteriological investigations may be undertaken before the true nature of the condition has become masked by the onset of putrefactive alterations. With the mutual assistance of the practitioner, the sanitary authority, the veterinarian, and the bacteriologist, we may look forward with confidence that our present ignorance of the nature of mysterious outbreaks will be successfully mended in the future.

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A CLINICAL DEMONSTRATION OF CASES OF HYSTERIA,

At the National Hospital for the Paralysed and Epileptic,
Queen Square, May 23rd, 1899,

By J. A. ORMEROD, M.D., F.R.C.P.,

Physician to Out-patients at the Hospital.

GENTLEMEN,—It is my intention to-day to show
you several examples of hysteria. I do not pro-
pose to give you a lecture on the subject, in the
first place because it would take a very long time,
and in the second place because I do not think
the time is ripe either for an accurate definition
of hysteria or for a theory of its origin. Those
are difficult questions. I shall simply show you
cases, and make a sort of commentary on them as
I go along.

The first patient is under the care of Dr.
Ferrier, who has kindly allowed me to show her.
She is suffering from paralysis of the right arm.
Her history, briefly, is as follows:—Her age is
twenty-one. She came here first in May, 1896,
with the history that when fourteen years of age
she had brain fever, as it was called. In this
" brain fever," she was unconscious for three
weeks, and ever since that she has been subject
to fainting fits. Sixteen months before she came
here she had pain in the right arm and in the
neck, which ceased in a few days, but left the
right arm paralysed. When admitted as in-patient,
in October, 1896, the right arm was paralysed,
anæsthetic, and slightly rigid, and it appears that
there was also some anæsthesia of the right leg.
She went out better, but not well as regards the
arm. Towards the end of 1897 she complained
of "wriggling" movements on the side which was
not paralysed, and the right arm became weaker
again ; for this she was re-admitted last October.
I gather from the notes that the movements some-
what closely resembled chorea, but I did not see
them myself. There are, as you know, hysterical
cases in which there are movements more or less

resembling those of chorea. There is at the present time a woman in the hospital who has twitching movements of the right side and anæsthesia of the left side, just as this patient presented movements of the left side and anæsthesia (with paralysis) on the right. Now, as you see, the patient cannot move her right hand or arm. She cannot feel a touch upon the right hand or the forearm. You see also that she cannot feel a decided pin-prick there. As I move the pin upwards she first feels the touch or prick just below the shoulder, the anæsthesia terminating in a circle round the limb. This is sometimes called glove anæsthesia, because the anæsthetic area corresponds with the part covered by a long evening-dress glove. Evidently it corresponds to the distribution of no particular nerve or nerve-root, for the territories of nerve-roots and nerves run in stripes down the limb. I will now place her right hand in various positions, with her eyes closed, and ask her to put the unparalysed hand into the same posture, but she tells us she cannot, as she has no idea how the right is placed. So the sense of position is also lost. You may notice that the areas of anæsthesia are practically the same for the sense of touch, of pain, and of muscular sense. The anæsthesia shows also one peculiar feature, which may be called " psychical." With her eyes closed, I touch the sound arm several times, asking her to say " yes " when I touch her ; I then ask her to say " no " when I do not touch her, and proceed to touch the anæsthetic arm several times. Now (though I varied the rhythm or regularity of the touches on the anæsthetic parts) the answers " no " come as correctly as the answers " yes," which seems to show that she does feel in some way, though she thinks she does not. It is well not to describe this point too much before the patients, or they will see the absurdity of it, and will not give such answers again. It suggests malingering, but I do not think this is the case. We once had a patient here who answered in this way. She said she could not feel, and yet she gave the same answers as the patient we have just seen. I therefore got one of the house physicians to examine her when asleep. It was found that a prick on the sound side woke her up, whereas a prick on the anæsthetic side did not do so. This appeared to exclude malingering.

I now show you another case of hysterical paralysis with anæsthesia. In this case the loss of power affects the legs. You will notice that as she walks she is very unsteady. She moves her legs in a spasmodic way, and stamps very decidedly. · If you compare the walk with that exhibited by patients with organic disease, it reminds you of tabes. But in her case tabes is unlikely owing to her age and to her sex. This difficulty of walking came on comparatively recently, about a month ago, after a fit. You see that the left leg is insensible to touch or prick, but she can feel with the other leg. She cannot feel on her left hand or arm, but she can on her right. On the right half of the face she can feel, but not on the left side. It is the same on the trunk. You thus see that the anæsthesia has a different distribution to that in the last case, for she has hemianæsthesia. It is on the left side, which is, perhaps, the more usual in such cases. Her tongue is anæsthetic on the left side, but not on the right, and tickling the left nostril produces no effect whatever. Her left conjunctiva is also anæsthetic. There is marked plantar reflex on the right foot, but not on the left. Her knee-jerks are normal. There is a tendency to clonus in her right foot. There is a tender region just beneath the right mamma, but apparently nowhere else. Though now she complained mostly of her walking, she first came here on account of fits. These fits, we were told, had existed since she was nine years of age, and had been generally worst at the menstrual periods, and often were brought on by excitement or fright. They are said to have occurred during sleep, and often to come on in series. She is said, with what truth we cannot tell, to have bitten her tongue once in a fit. When she first came, namely, in December, 1897, I saw one of these fits in the out-patient room. It was the best approach to the hystero-epileptic fit described by French authors that I have seen. There are, as you know, several varieties or grades of hysterical fits. The first grade is the ordinary fit of hysterics, often commencing with the sensation of a lump in the throat (globus), followed by agitation, crying, or laughing, without loss of consciousness, and passing off in a short time. The next grade is a severer fit, called here " hysteroid," in which the patient loses, or appears to lose, con-

sciousness. The limbs are convulsed, and there is often a display of violence. This fit, in some respects, suggests an epileptic attack, mainly from the loss of consciousness and the convulsions of the limbs, but it differs in many particulars which I need not now mention. There is a third kind of fit, which is described by French authors under the name of hystero-epilepsy, or "grande hysterie," in which the fit is said to begin with a first stage, which is almost or quite undistinguishable from true epilepsy, and then goes on to other stages which are characteristic of hysteria; the second consisting of meaningless movements, opisthotonos, and so forth; the third of attitudinising, or acting out some scene of emotion; the fourth of a more quiet delirium. In the fit which I saw, the patient was sitting in a chair, and the first stage very closely resembled an epileptic seizure. Her eyes were open and staring, the head rotated to the right, there were tonic spasms of the limbs, and she fell or slid off the chair. My first impression was that it was a true epileptic fit. But after she had been on the floor a little time the hysterical stage began, she beat her hands together violently, and her back became arched and rigid; next she became violent, and tried to tear her hair out. Further, these phenomena could be controlled by pressure over the left inguinal region, which again is characteristic of hysterical fits according to the French. But she did not bite her tongue, and she did not foam at the mouth, neither did she pass her excreta under her. (On the other hand, she is said to have once bitten her tongue.) When she came into the hospital it was found that besides the fits she had hemianæsthesia on the left side, very much as she has now. But there was this difference, that at that time the hemianæsthesia exhibited the psychical character which I demonstrated in our first patient, whereas now it does not. Now, if I touch the anæsthetic side, and ask her to say " no" when she does not feel, she recognises the contradictory nature of the request, and simply replies that she cannot feel. But she used to say "no" as regularly as the other patient.

I show you a chart indicating the distribution of her anæsthesia; it is limited to one side all the way down. Another interesting point was the vision. When she came into the hospital she was blind in the left eye. It was shown that that

blindness was psychical. This was done by putting a prism in front of the sound eye, and she was asked how many things she saw; she said she saw two. If she had not seen with both eyes she would not have seen two things. Her blindness and hemianæsthesia disappeared while she was in the hospital, soon after a fit. Similarly her present difficulty of walking appeared after a fit. I suppose that is sufficiently conclusive that these symptoms are hysterical in nature, even if other features did not practically show them to be so. I am puzzled about the ankle clonus which she exhibits to-day; it is the first time we have seen it.

The next patient whom I show you, when first she came into the hospital, exhibited some unusual symptoms, but she has now largely recovered. She had some difficulty in walking, which was due to an affection of the right foot. She also had a constant chewing movement—the mouth kept opening and shutting, with a lateral movement of the jaw towards the left. This movement my colleague, Dr. Risien Russell, said could be exactly imitated by stimulating a particular portion of the brain in the monkey. Her tongue was partly protruded from the left corner of her mouth, and it looked as if she were chewing the end of her tongue. Though her tongue is not now protruded, she still has a marked deviation of it to the left. It gives one the idea that there must be paralysis of the left side of the tongue. But I think it is due to over-action of the right half of the tongue. Had she also a contraction of the right side of her face (as has, indeed, been described by Charcot and others), the simulation of left-sided paralysis would be still more complete.

I do not think this peculiar condition of the tongue is at all common. I have only seen one case like it, and that was in a man who had a functional affection of one side of the body, with a deviation of the tongue, of so exaggerated a kind that he was thought to be malingering. This patient cannot now put her tongue over to the right side, however much she tries to do so. The condition of her right foot was interesting at the time she first came, but it is well now. She had a sort of varus of the foot, which was due to contracture of its muscles, corresponding very much to what we have in the tongue.

The next patient used to attend for another kind of rhythmical movement, namely, a paroxysmal spasm of the respiratory and laryngeal muscles, producing a cough. This cough went on with the greatest regularity all day long, and never varied in rhythm, and it was always of the same loud, harsh tone. Her hysteria appears to have been started by a fright which she had two years before I saw her, after which she never felt well. She went to a London hospital for her cough, and it was thought that she had something the matter with her pharynx, for which operations were performed, but these, of course, did not improve matters, and at last the cough settled down into the form described. It stopped at night, and it stopped when she laid down, but when she got up it recommenced. It would also stop while she was speaking. Another feature was this : I found there was a tender spot about the left mammary region. Pressure on that spot stopped the cough at once, just as an hysterical fit can sometimes be stopped by pressure on certain parts. The cough could also be stopped by strong faradisation. She was taken into the hospital, and got practically well of it. After her discharge she got out of health, and had a return of the cough. Shortly after it disappeared she became subject to another paroxysmal affection of a similar nature. This was a sort of blowing noise, half cough, half sniff, and half pant, which occurred both on inspiration and expiration. This, oddly enough, did not stop when she lay down, and could not be stopped by pressure on the region which I have mentioned. It gradually disappeared, and she has now got no hysterical manifestation at all. This patient, then, has had no fit, and has never been paralysed, and, except that she was found to be hemianæsthetic on the left side while she was in the hospital, the hysteria has declared itself solely by the respiratory spasms that I have described.

I now want to show you an example of hysteria which has lasted for a very long time. This woman, whose age is now fifty-nine, has lost her voice, as you perceive, and drags her legs as she walks. She has been attending here eighteen years, before which time she was ill eight years, making a duration of twenty-six years altogether. It may be of interest to mention that she was under the care of the distinguished physician, Dr.

Lockhart Clark, whose work on the anatomy of the nervous system, and the method of staining with chromic acid and carmine is well known. She had then paralysis of the left leg, which did not vary very much, and did not get well. One day we gave her sparks from a static machine, and, greatly to her surprise and joy, the paralysis of the left leg, which had lasted for years, got well at once. I cannot say it got well permanently, because it constantly recurred. But whenever she had the sparks from the electrical machine the paralysis went away. An affection which is capable of such sudden recovery can scarcely be due to organic disease. The aphonia is the ordinary hysterical form. Sir Felix Semon has examined her larynx, and says there is nothing organically wrong with it. Her voice will come and go under the influence of emotion, with the appearance of the menses, or under the application of electricity. Lately the other leg has become affected, and, as you see, she now drags both legs in walking. The reflexes in the legs are not increased. So far as I know, there is no anæsthesia, but, not having been an in-patient, she has not been minutely examined as to this. When quite young she had hysterical fits, but she has not had them since she has been attending here. In the last two cases that I shall show you, I suspect there is some element over and above hysteria.

The first of them, a girl, came to me in October, 1897. Ten months previously she had been in a hard place as servant girl, and had suffered from palpitation and vomiting. Five months before she came she had tremors of the left leg and right arm. I certainly thought these tremors were hysterical. She still shakes the right arm, but less than formerly ; the movement is regular in rhythm, and chiefly affects the wrist and fingers, and the arm less. It appears to be worst when she holds out her hand. It is not unlike the tremor of paralysis agitans, except that it is almost quiet when she is at rest. She suffered also from loss of power in the left leg, and she had a tender zone in the left inguinal region, pressure upon which caused panting respiration, and when admitted it was found that her fields of vision were very much contracted. These symptoms seemed distinctly hysterical. When she was in the hospital she improved much under the Weir

Mitchell treatment, but what appeared to influence the tremors more than anything else was an attack of subacute rheumatism. Her temperature rose, and while she had this increased temperature the tremors stopped entirely. This illustrates the old saying, "febris spasmos solvit." A great many epileptics, too, if they have fever, are rid of their fits. But a suspicion arose whether this case might not have an organic basis, because, while she was in the hospital, ankle clonus developed, and it seemed to be of a typical kind. It is a moot question whether some hysterical patients can have ankle clonus, but, of course, it is much more common in connection with organic disease. The knee-jerk is very marked on the left side. The foot is rather rigid. If the ankle clonus means organic disease, it probably indicates some sclerosis affecting the pyramidal tract. In cases of doubt it is well to examine the plantar reflex, It is stated that in normal states of the nervous system the plantar reflex is characterised by flexion of the toes, but in affections of the pyramidal tract by extension. But here, you see, the foot being cold, the plantar reflex is very sluggish, and its character rather doubtful. Therefore it does not help us much.

The last case I want to show you is that of a man in whom there is some reason for believing that there is organic disease and hysteria as well. He has been a patient at St. Bartholomew's Hospital, where he went first of all complaining of paralysis of the left leg and left arm. This paralysis had come on gradually after a series of fits. These fits were not seen by us, therefore I cannot describe their character with certainty. We are told, however, that he had bitten his tongue. When admitted to hospital it was found that that his left limbs were partially paralysed, chiefly the leg. He had very definite ankle clonus, and exaggerated knee-jerk on the left side. So far the symptoms pointed to some organic disease of the cerebrum, giving rise to descending sclerosis of the left pyramidal tract. But he had sundry other symptoms which appeared to be functional. Thus he had a great tenderness in the left inguinal region, and on the left side of the body generally. He also had another symptom which was extremely interesting, namely, a patch of anæsthesia on the right leg. The distribution of this anæsthesia was not like that in the

first two cases that I showed you, for it did not affect half the body (hemianæsthesia), nor involve one limb in the fashion of a glove or stocking but formed an irregular patch on the front of the right leg. As he has got paralysis of the left leg and anæsthesia of the right leg, the question arises —might this not be due to some lesion involving one lateral half of the cord? That would give rise to anæsthesia of one leg and paralysis of the other. But I do not think this can be so, firstly, because the paralysis affected at first the left arm as well as the leg; secondly, because at one time the anæsthesia showed the psychical character which I demonstrated to you in our first case. On the whole, I am inclined to think that the anæsthesia of the right leg is hysterical, but that the paralysis of the left side is due to some old organic lesion.

Puerperal Infection with the Bacillus Aerogenes Capsulatus.

—F. C. Wood ('Med. Rec.') reports the following conditions found at autopsy twenty-four hours after the death of a woman from puerperal infection. The whole body was noticeably swollen and there was a marked emphysema of the subcutaneous tissues. The superficial veins were distended with gas, and on opening the abdomen a large amount of gas escaped. The intestines were of a deep red from dissolved blood pigment, and the peritoneal coat was dull and covered with flakes of fibrin. Five hundred cubic centimetres of bloody fluid were found free in the dependent parts of the cavity. When the pericardium was opened gas escaped and a fresh pericarditis was found; a thrombus was found in the pulmonary artery. Gas was found in the heart muscle, liver, and spleen. The kidneys were large, the capsule stripped off easily, and their substance was edematous and rotten. Gas could be squeezed from the vessels. Large numbers of the capsulated bacillus were in cultures made from the uterus; these were accompanied with very few streptococci and numerous colon bacilli. Cultures from the pericardial and peritoneal fluids showed the capsulated bacillus, as did microscopical examination of the heart-muscle, thrombus in the pulmonary artery, kidneys, lungs, and sections of the uterus. Sections of the hairy scalp of the fetus showed the same bacilli.—'American Journal of Obstetrics,' May, 1899.

LACERATION OF THE PERINEUM AND ITS REPAIR.

By ARTHUR E. GILES, M.D., B.Sc.Lond.,
F.R.C.S.Edin., M.R.C.P.Lond.,

Assistant Surgeon, Chelsea Hospital for Women;
Obstetric Physician, St. Marylebone Dispensary.

Causation.—Laceration of the perineum is an accident which is nearly always the result of labour, though it may be caused by surgical procedures, such as the extraction of large polypi or foreign bodies from the vagina. I have seen it produced during the removal of a large, old-fashioned wooden ring pessary, which had been *in situ* about twelve years. The vaginal orifice had meanwhile become much contracted through the atrophic changes incidental to the meno-pause.

The conditions which predispose to laceration during parturition are: precipitate labour, a large fœtal head or broad shoulders, undue softness, friability or rigidity of the perineum, and bruising of this structure by too long pressure upon it of the fœtal head.

Careful management of the second stage will often prevent laceration, and will generally minimise it when inevitable. Sometimes the head has been successfully extracted, and the shoulders come down rapidly, and tear the perineum. The risk is greater in occipito-posterior presentations, when the stretched perineum has to encounter the hard occiput instead of the soft face. The forceps rashly applied may be relied on to cause laceration; but when carefully used it becomes an instrument of safety instead of one of danger, and by guiding the head downwards and forwards under the pubic arch, instead of allowing it to emerge directly downwards, the forceps will ofen prevent a perineal tear, or at least limit its extent to he smallest inevitable dimensions.

Varieties.—These are partial, complete, and central.

In *partial* laceration, the tear starts at the anterior extremity of the perineum, and may involve little more than the fourchette, or it may extend back to the sphincter ani, but the latter remains intact. Sometimes the cutaneous surface of the perineum is untorn, but its vaginal surface

gives way. A vaginal tear nearly always occurs to one or other side of the median posterior vaginal column, the thickness and firmness of which prevent a median split.

Complete laceration means a tear extending from the vagina through the sphincter ani, and up along the anterior wall of the rectum. A bad tear may reach one to two inches along the rectal wall. The effect of this is to throw the vaginal and rectal orifices into one, the septum between the two canals not reaching to the surface. We have then practically a "cloaca."

Central laceration is very rare. In this case the anterior end of the perineum remains intact, and a laceration occurs at some point between the vaginal and anal orifices. There are a few cases on record in which the child has passed actually through instead of in front of the perineum. This accident is generally due to long-continued pressure of the child's head, whereby the vitality of the perineum is so weakened that its gives way at its most prominent point. For the child to be born in this way, the perineum must be a very long one, antero-posteriorly. A secondary form of central laceration is one in which perforation occurs later from gangrene, with the formation of a vagino-perineal fistula.

Results.—The partial or complete destruction of the perineal body brings about the loss of the normal support to the vaginal walls, and is frequently associated with prolapse of the posterior wall (rectocele). If, in addition, the attachments of the anterior vaginal wall to the pubes have been stretched or loosened, a cystocele also occurs. The uterus may take part in the hernia, when its ligaments have been stretched, and may be found lying low in the vagina (prolapse), or protruding through the vulva (procidentia). Even when no hernia occurs, the unduly patulous vagina favours uterine infection, and thus predisposes to endometritis.

When laceration is complete, the condition of the patient is very distressing, as, in addition to the above troubles, she suffers from incontinence of fæces and flatus.

Treatment—In view of the inconveniences to which laceration gives rise, the perineum should always be stitched up at once, when it is torn during childbirth. As a rule, this should be done when the placenta has been expelled and

the vagina and vulva have been cleansed. But if some delay is necessary, union may still be obtained if the suturing be done within twenty-four hours. Some authorities have advocated that a perineum should never be sewn up, but left for some weeks, on the ground that union does not take place; but the consenus of opinion and experience does not support this view, for the majority of cases certainly heal. When primary union does not take place, it is generally 'due to one of two causes. Either there has been a want of

and this is especially the case with a jagged tear in a perineum that has been much bruised. When the accident has resulted from a precipitate labour, or from a jerk during delivery with forceps, the tear is generally a clean one, resembling a surgical wound, and will heal readily under proper aseptic management. When, on the other hand, the tear results from long delay in the second stage, with the head bulging the perineum, the edges of the wound are usually damaged, and healing may not take place kindly,
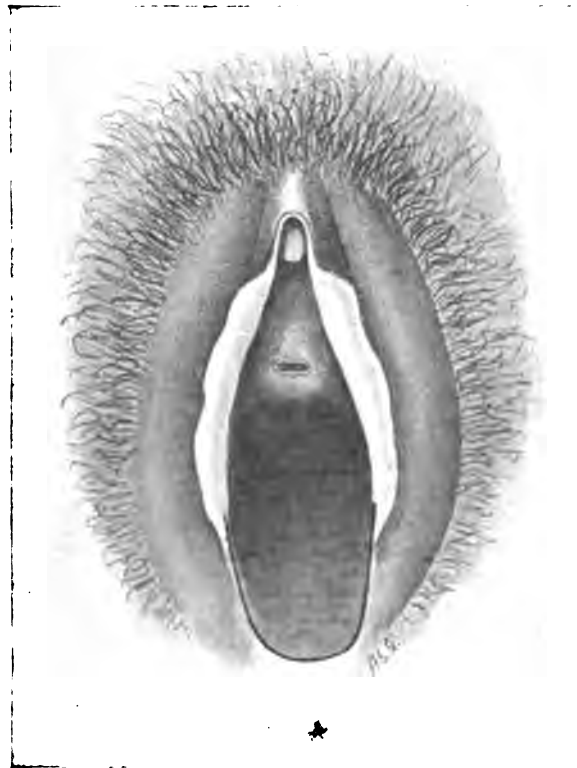
Fig. 1.—Perineorrhaphy for partial laceration; showing the line of incision.

surgical cleanliness at the time of sewing up, or on following days, or the cutaneous portion of the perineum has been repaired, and the vaginal portion left gaping. This allows of accumulation of lochia in a pouch on the posterior vaginal wall, decomposition changes set in, and then the whole wound may break down. To prevent this, care should be taken to bring the vaginal as well as the cutaneous margins of the tear into apposition. Sometimes, however, the nature of the tear is itself responsible for the failure of union,

if at all. I think that careful observation will confirm the correctness of the view that when the wound breaks down, after primary perineorrhaphy, in spite of aseptic precautions and accurate suturing, it is because the wound was one of this jagged type with bruised edges. But even when the tear is of this kind, it is better that the attempt to repair it should be made.

When a torn perineum has been left untreated, or when union has failed to take place, the operation of secondary perineorrhaphy is required.

There is no question that every torn perineum should be repaired, unless the tear is a very small one, because bad results are otherwise certain to follow.   The essential point of difference between primary and secondary perineorrhaphy is that in the latter case the surfaces which have become healed over by granulation must be denuded to allow of union taking place.   It is usual to describe two operations according to the extent of laceration, but the principle is the same in both, namely, the formation of flaps which

which attaches to it, but it is one which I have found most satisfactory both in performance and in results.   It is notoriously difficult to describe these operations, but I hope, with the help of the accompanying diagrams, to make the procedure intelligible both to the student and to the practitioner.

Partial perineorrhaphy.—This is the operation for the repair of a partial laceration. The patient being anæsthetised and placed in the lithotomy position, the lower portions of the vulva are
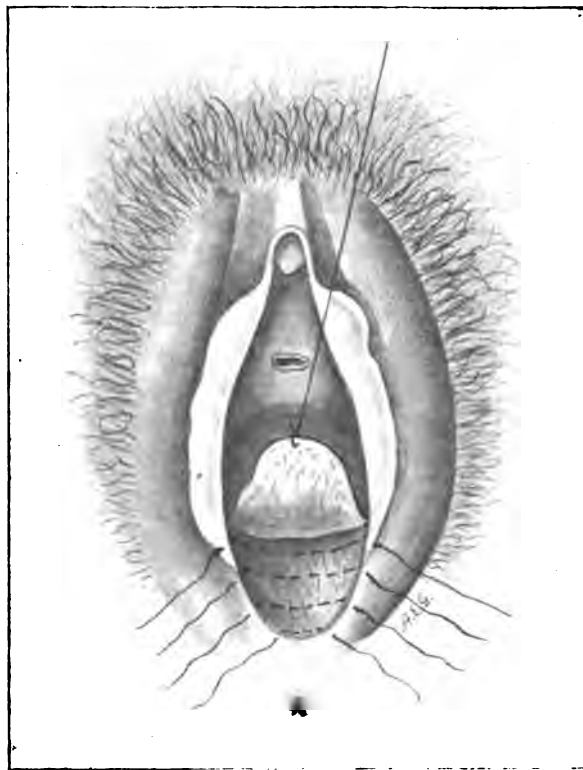
Fig. 2. -- Perineorrhaphy for partial laceration ; dissection of the flap, and passing of the lateral sutures.

contribute to the restoration of the vaginal or rectal wall, and the bringing together of the edges of the raw surface from which the flap is raised.   The principle of flap-splitting was introduced by Lawson Tait ; many modifications have been introduced, and many of them have been labelled, " Tait's operation " ; but Mr. Tait would no doubt fail to recognise some of them as originating with him.   The operation which I am about to describe has probably been gradually evolved : I do not know of any special name

shaved.   A vaginal douche is given, and the vagina is cleansed by thorough swabbing.   A preliminary curetting is advisable in cases of endometritis, lest harmful discharges from the uterus interfere with healing.   Two fingers are introduced into the rectum, to put the parts on the stretch.   The necessary incision is shown in Fig. 1, and is made by means of sharp-pointed, angular scissors, introduced in the middle line, and carried forwards in a curve on each side, skirting the line of junction of skin and mucous

membrane, as far forwards as the posterior extremity of the labia minora. The incision should end towards the *inner* side of the labia minora, and the anterior extremities of the two halves of the incision should be exactly opposite one another. The flap so marked out is raised as in Fig. 2. To assist in this step, an assistant should hold the flap in the middle of its posterior border, with forceps. In Fig. 2 it is shown held up by a thread. During the dissection, which splits the recto-vaginal septum, the operator must

not to pierce the rectum. Three to five sutures are passed in this way, according to the extent of the laceration, the most anterior one should correspond to the anterior limit of the incision (Fig. 2). Before these sutures are fastened, the flap must be dealt with in the following fashion: It is doubled up on itself laterally, by means of a continuous suture of catgut or fine silk, which starts at the apex of the flap and passes from side to side, bringing the edges gradually together, as in Fig. 4, until the two sides of the base of
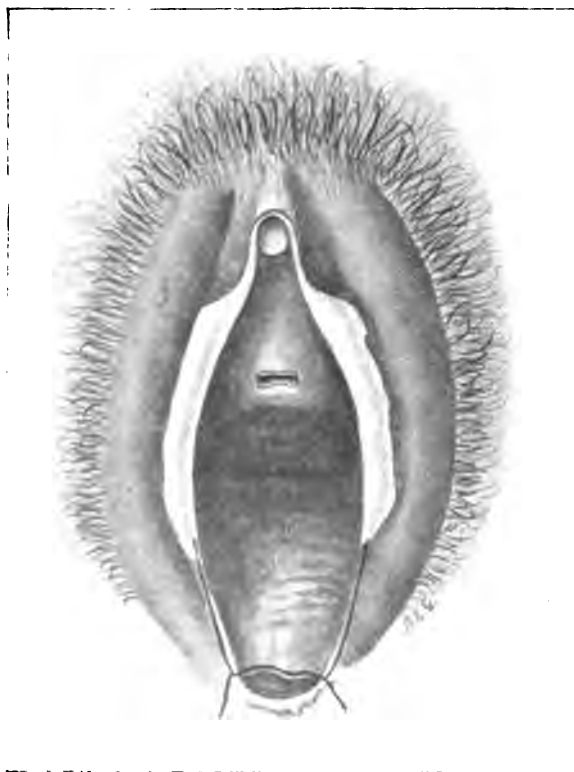
Fig. 3.—Perineorrhaphy for complete laceration; showing the lines of incision.

be careful neither to button-hole the flap, nor to let the scissors cut into the rectum. It is important that the flap should be well freed at its upper lateral portions. The next step is the introduction of the sutures. These may consist of silk or silk-worm gut. A needle with a large curve is introduced, unthreaded, at the margin of the incision; it is passed deeply under the wound, and made to emerge at the corresponding point on the opposite side, after which it is threaded and carefully withdrawn. Great care is necessary

the flap have been approximated. This suture is made off, and the deep lateral sutures are then fastened either by tying, or by means of shot and coil. This completes the operation. The method of dealing with the flap, just described, is an important point in the operation, for it shuts off any entrance of discharges into the wound from the vaginal side. The thickened spur of vaginal wall which results helps to strengthen the perineum as with a buttress.

Some operators prefer to pass the lateral sutures

in two layers, a deeper layer comprising the sub-cutaneous structures only, and a superficial layer uniting the skin margins. This plan avoids the subsequent indrawing and puckering of the perineum in the middle line, which sometimes results from the plan of sewing up in one layer.

As regards dressing, the vagina should be lightly packed with iodoform gauze, and a pad of absorbent wool, sterilised or medicated, is kept

wards towards the rectum. The lateral sutures fulfil the third object.

The incision is shown in Fig. 3. The point of the scissors is introduced in the middle line at the edge of the recto-vaginal septum, which is put on the stretch by two fingers introduced into the rectum. The incision is carried along the edge of the septum, then forwards along the junction of skin and vaginal mucous membrane
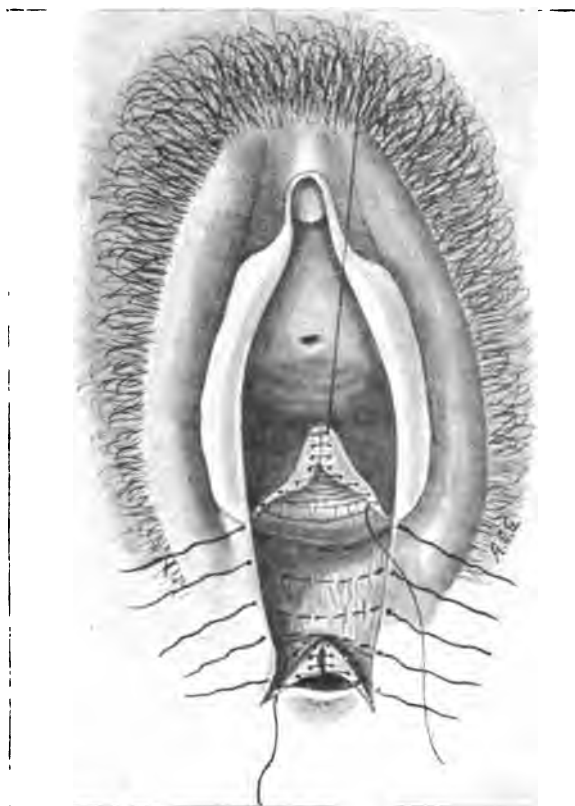
Fig. 4.—Perineorrhaphy for complete laceration ; showing the method of suturing the flaps to form posterior vaginal and anterior rectal wall.

in position against the perineum by means of a T-bandage.

Complete perineorrhaphy. — This operation, which is an extension of the preceding one, has three objects : (1) to provide a posterior wall for the vagina ; (2) to form an anterior wall for the rectum ; (3) to form a new perineum between the two structures. The first object is attained by raising a flap towards the vagina, as above described. The second object is effected by raising two small lateral flaps backwards and in-

to the posterior end of the labium minus. A corresponding incision is made on the opposite side. An incision is then carried backwards on each side for about half an inch, starting at the junction of the recto-vaginal septum with the skin, as shown in Fig. 3. The total incision is thus roughly H-shaped, the anterior limbs of the H passing forwards on each side of the vagina, the posterior limbs passing backwards on each side of the anus, and the cross-bar corresponding to the recto-vaginal septum. The anterior flap is

dissected forwards as previously described (Fig. 2). Two triangular lateral flaps are then dissected up posteriorly, as shown in Fig. 4, the apex of each corresponding to the angle between the cross-bar and the posterior limb of the H incision. When turned backwards and inwards these two flaps meet, and they are then fastened together by a continuous suture of cat-gut or fine silk, which starts from the junction of the two flaps, and passes from side to side, gradually approximating first the median, and then the posterior edges of the flaps. At the stage shown in Fig. 4 the wound is shaped roughly like a four-sided pyramid with its base superficial. The anterior border of this base is formed by the anterior flap, the posterior border by the joined posterior flaps, the sides of the base are formed by the skin edges. In the completed operation the sides of the pyramid are brought together, whilst the anterior and posterior borders become doubled up on themselves, forming ridges respectively on the posterior vaginal and the anterior rectal walls.

After the posterior flaps have been brought together, the rest of the operation is performed as described under partial perineorrhaphy, that is to say, the deep sutures are passed from one skin margin to the other, the anterior flap is sutured as shown in Fig. 4, and, lastly, the deep sutures are fastened. The dressing is as before.

After-treatment.—It is sometimes advised that the legs be tied together, but I have never found this necessary, whilst it adds considerably to the patient's discomfort. In a certain proportion of cases, the patient has some difficulty in passing urine during the first day or two, and the catheter may be required. It is sometimes an advantage for the bladder to be emptied in this way, whether required or not, during the first forty-eight hours, as soiling of the wound is thereby avoided. The bowels should be opened early when the laceration is partial; when it involves the rectum, it is well to keep the bowels at rest for two or three days, though the possibility of hardened motions damaging the freshly-united tissues must also be borne in mind. On the whole, I think this drawback is less than that of allowing fæcal matter to contaminate the wound too soon, since, if this become infected, the whole of it may break down. The wound should be kept as dry as possible, and this remark applies to its vaginal as well as to its perineal portion. For this purpose the pad of absorbent wool should be renewed frequently, and fresh iodoform gauze should be introduced into the vagina from time to time. The sutures are removed from the twelfth to the fourteenth day. It is wise to keep the patient absolutely resting for three weeks, aspecially after complete perineorrhaphy.

Lancing Gums of Teething Children.—Dr. Head

('Therapeutic Gazette,' May, 1899). When the tooth is ready to erupt it lies in a bone cavity. The crown is fully formed, but the root is unfinished. The lower portion of the root is composed of soft dental pulp that has not yet finished its work of creating the tooth bone that is to give the tooth nrm anchorage in the jaw. The alveolar process above the crown melts away by absorption, and the tooth rises up, but when the crown reaches the elastic gum, back pressure at once results, and the tooth is cruelly forced back on the nerve. If the nerve has sufficient vitality, the child suffers no inconvenience and no interference is necessary; but if three or four of these nerves, as frequently happens, receive back pressure at the same time, the irritation becomes manifest. The inhabitory centres are overpowered and the child suffers.

The remedy of course is simple. The gum should be cut down to the tooth, when the pressure will be at once relieved. With molars and canines it should be a cross-cut; with the incisors the incision should be made along the cutting edge of the tooth; but, above all, it must be remembered that the tooth capsule must be entirely cut through or the pressure will continue.

Should the child be well and happy when the teeth are expected, no surgical interference is necessary; but if at this time the child begins to droop, and its bowels become unexplainably deranged, lance where the teeth are expected and lance thoroughly. Do not wait for the gum to bulge or to become inflamed, for the child is already suffering the most terrible toothache and cannot explain.

MEETING OF THE SOCIETY OF ANÆSTHETISTS,

At 20 Hanover Square, March 17th, 1899,

Dr. DUDLEY BUXTON in the Chair.

Mr. Bellamy Gardner read the following paper on " Nitrous Oxide Gas and Oxygen as an Anæsthetic for Surgical and Dental Operations " :—

In passing under review the work which has been accomplished by means of nitrous oxide gas mixed with various percentages of oxygen, in the very first words let me acknowledge the debt which is due to Dr. Hewitt for his introduction, after a long and patient research, of a method of administering these gases, and for his invention of a regulating apparatus whereby they can be inhaled at ordinary atmospheric pressure.

Since the beginning of the year 1895 I have used the mixture almost exclusively in *dental* cases, and proceeding exactly according to the directions formulated by Dr. Hewett, I have now, with an experience of several thousand administrations, the following observations to record : The anæsthesia is complete, tranquil, not unpleasant to witness, sufficiently long for the extraction of about three ordinary teeth without any pain or bad dreams. The sensations produced by its inhalation are often exhilarating, and never dreaded a second time.

The administration is best conducted by using the respiration as the *chief* (personally I could take it as the *only*) guide.

Commencing with nitrous oxide and 2 per cent. of oxygen, I wait until, after five or six breaths, a rather deeper breathing sets in; I then increase to 4 per cent., then to 6 per cent. or 8 per cent. of oxygen, according to the type of patient, aiming to produce audible normal respiration. If the breathing be deeper than this, I increase the oxygen till it is attained; if more shallow, I decrease the oxygen, to produce the same result, remembering, however, that good anæsthesia always takes time (one and a half to two minutes, sometimes longer) to produce.

Soft snoring, if the head be neither flexed nor distended, is an excellent indication to begin the operation, but I regard the eyes as affording the most invariable and reliable symptom of complete insensibility. The eyeballs converge and look downwards after slight preliminary vertical nystagmus, the pupils being partially contracted, as in natural sleep.

Now this can be observed without testing the conjunctival reflex, for the eyelids are generally open or half open at the time; but if tested in addition, the lid reflex will be found " sluggish," if not quite in abeyance.

Next, as to returning consciousness. Sight and hearing return before sensation to pain ; therefore watch the eye if open, if not, elevate the lid. When voluntary movement of the eye in " looking round " occurs, you must immediately warn the operator to stop. This will, without exception, never fail to prevent tranquillity being mistaken for anæsthesia.

I have seen only two patients nearly faint under its influence, but both were subject to such attacks on slight excitement, and I do not think the anæsthetic had any primary influence upon them. Some boys are sick after gas and oxygen ; they often eat largely and bolt their food. Perhaps, having had toothache, they have not been able to bite even as much as usual. Undigested food in the stomach is, I think, most frequently the cause.

If, as I suggest, too many teeth are not attempted at a time, gas and oxygen for *dental* operations has no other detractions. It is as nearly a perfect anæsthetic, and as safe as could be desired by dentist or anæsthetist.

Now as to its application in surgery. It is a matter of notoriety that nitrous oxide gas has hardly produced any appreciable mortality at all.

Perhaps, owing to the brevity of its inhalation, or the comparative healthiness of those who have taken it for tooth extraction, or the slight nature of the operations concerned in its use since 1868, the fact remains that by diligent search I can only find accounts (in some cases so fragmentary as to be hardly reliable at all) of eighteen deaths in Europe and America connected with its exhibition. I think that in thirty years of widespread daily administration the total number of inhalations must have amounted to several millions. Even of these recorded fatalities only half can in any strict sense be put down to the nitrous oxide itself, whilst of these probably no other anæsthetic would have afforded less risk.

The two untoward factors due to the presence of

nitrous oxide gas without oxygen in the circulation are (1) the occurrence of concomitant asphyxia (which is, however, readily recognisable before actual danger to life arises); and (2) the rise in blood pressure, which offers some possibility of cerebral apoplexy in those patients with a degenerated arterial system.

With a view to procuring, if possible, a still safer anæsthetic than ether, I turned my attention to nitrous oxide gas and oxygen for use in surgery.

The obvious fact that, under this anæsthetic, at the moment of removing the face-piece there was no very patent need for doing so, except (the operation being *dental*) to allow the operator to begin, led me to think that we had possibly at hand a great discovery in the direction of applying the mixture to the needs of minor surgical work, for at the acme of what might be termed "dental" anæsthesia, the patient is sitting upright, breathing through the apparatus in a perfectly normal manner, with a good colour, undilated pupil, and steady pulse; rendered anæsthetic within ninety seconds, and yet needing no immediate "rescue" by admission of air. What possible accident could occur by continuing the inhalation at the same level and guided by the same symptoms which promised to afford evidences of narcotic influence upon the nervous system almost identical with those of chloroform and ether?

In the year 1895 I had the advantage of assisting Dr. Frederic Hewitt at the Dental Hospital of London with a series of experiments upon the "Effects produced in the Human Subject by the Administration of Definite Mixtures of Nitrous Oxide and Air, and of Nitrous Oxide and Oxygen," a work of which it will be impossible for some years to estimate the full value, and in which the extreme accuracy of all details and the precautions taken against error I can personally verify.

These exhaustive researches led me to try the mixture of nitrous oxide and oxygen (administered, however, not in a fixed percentage, but by means of Dr. Hewitt's regulating gas and oxygen inhaler) in cases of tonsil and adenoid extirpation in the Aural Department of Charing Cross Hospital. The favourable results obtained there during rapid and skilful operations by Mr. Waterhouse led me, after ten months' trial, to publish a short account of its use in the 'Clinical Journal' for September 2nd, 1896.

The next step was its employment in cases of short operation, which did *not* require removal of the facepiece, tenotomies, passage of catheters, breaking down joint adhesions, incisions of the tympanum, examinations of the pelvic organs, opening and packing of buboes, and such like rapidly executed manoeuvres. In these I generally found that all went well for several minutes until a certain kind of rigidity asserted itself, only abolished by the admission of breaths of air as well as oxygen. These breaths of air at that stage used often to upset the rhythm of respiration, and somewhat impair the subsequent intake of the anæsthetic mixture, and I was glad when the operation was at an end.

On considering what might be the cause of this rigidity, other marked signs of asphyxia being absent, and though not quite convinced that it was not of a reflex nature in operations upon painful and sensitive regions, I came to the conclusion that 10 per cent. of oxygen, the largest amount yielded by Dr. Hewitt's apparatus, might be enough in dental cases and other short inhalations, but that possibly a percentage of oxygen more nearly approaching that present in atmospheric air (namely, 21 per cent.) would be required after all the residual oxygen present in the patient's system, at the moment of the first breath of the mixture, had been expired.

Physiological experiment teaches that out of the 21 per cent of oxygen present in ordinary air only 4·8 per cent. is absorbed, the expirations containing 16·2 per cent of oxygen. At first sight this would seem to show that a small percentage of oxygen with any indifferent gas would be sufficient to prevent the supervention of asphyxia; but this is not the case. Clinical experience shows that, at any rate in the case of anæsthetic inhalations, the addition of oxygen readily affects the blood aëration, both under ether and nitrous oxide gas.

To obviate, as I thought, all symptoms of asphyxia in these anæsthesias with nitrous oxide gas, a percentage of 15 to 20 of oxygen should be available after the first few minutes inhalation, and I therefore had the last three apertures in Dr. Hewitt's regulating dial enlarged in diameter, so as to admit the necessary amount to the mixing chamber. This arrangement is all that is necessary to prevent the rigidity which I had previously

encountered, and even to supply sufficient oxygen to bring back consciousness without the admission of any air at all if all the apertures are opened, and the breathing is fairly deep.

That consciousness can be regained after unconsciousness of ten minutes' duration under gas and oxygen By admitting sufficient additional oxygen (and no air), points, perhaps, in the direction that oxygen alone, and no other atmospheric gas, is of much value to the organism in supporting the chemical changes which constitute the life of the nerve-cell. In the 'Lancet' for June 12th, 1897, I published an account, with illustrative cases, of what I had then accomplished; the longest administration I had then attempted lasting fourteen minutes. I continued using the mixed gases, chiefly in private practice, and gave a further account in the 'British Gynæcological Journal' for August, 1897, of several operations for which it had proved an exceedingly satisfactory anæsthetic. These included the incision into a large mammary abscess, with subsequent curettage and swabbing out with antiseptics, lasting seven minutes, the excision of an almost imperforate hymen, lasting eight minutes, and an abdominal exploration for diagnostic purposes; in all three cases no after-effects at all being observed.

I then grew bolder, and recorded instances of its successful application for the removal of a cystic adenoma of the breast lasting twenty minutes, dilatation of the cervix uteri for fifteen minutes, reopening of a lumbar renal incision during sixteen minutes. These were alluded to in an article in the 'British Medical Journal' for April 30th, 1898. Since then I have notes of longer cases still, two of twenty-five minutes' duration (exploration for necrosis of the femur, and excision of varicose veins in the leg), besides a very large number of excellent anæsthesias, ranging from five to twenty minutes.

The following are the opinions I have formed after the use of the mixed gases in surgical operations. The *circulation* is well maintained, the pulse being regular and full, never slow as under chloroform, but with only a tendency to increased frequency when asphyxial factors are allowed to arise. The *breathing* is like that under the A.C.E. mixture, not so stertorous or forcible as ether respiration, nor so quiet as that of chloroform. The *lid reflex* is very slight in good

anæsthesia, but is not quite abolished without some tendency to the use of too little oxygen. The pupil tends to become moderately contracted, varying inversely as the proportion of oxygen be small or large. The actual anæsthesia is not so profound as that obtained by chloroform and ether, that is, that though operations upon the most sensitive spots will not give the patients sensations of *pain*, there will be certain reflexes excited in adjacent limbs, or in the respiratory mechanism, which cannot be abolished completely under the influence of the mixture. Rectal operation will cause movement or rigidity of the legs in some people, and urethral dilatation has the same effect. In many persons abdominal relaxation can be attained, especially if the patient is made to lie on the side while, for instance, pelvic examination is being carried on. Retching movements and sickness cannot be controlled by more gas and oxygen, as with other anæsthetics; this is a great drawback, and negatives the value of the mixture in boys and girls, about ten to fifteen years of age, who seem somewhat prone to sickness. Coughing I have not met with. Profuse sweating is very common, and sometimes there is a lowering of skin surface temperature. After-effects are commonly absent, and consciousness is usually regained within three minutes of discontinuing the inhalation. Drowsiness is not present afterwards, most patients feeling quite fresh and clear in the head after even a quarter of an hour's anæsthesia. If nausea *be* excited, I consider it is of rather a persistent type. Florid, alcoholic, and very muscular men are not such good subjects as the more ordinary type, nor can it be recommended for small children.

I have tried gas and oxygen largely at the National Orthopædic Hospital on children of two years and upwards. In those under five years prolonged inhalation seems not only totally unsuitable, but positively dangerous, for the following reasons: in healthy children all reflexes seem to be more easily excited than in adults; effects of heat and cold, injury and shock, have a far more pronounced effect. The nervous system is not so thoroughly under the control of the higher centres, nor, as it were, has the respiratory regulator in the medulla yet become independent of afferent external impressions. The result is that we find, under chloroform and ether, high-pitched laryngeal crowing,

caused by reflex spasm in rectal, genito-urinary, and other operations; and under the slightly less profound anæsthesia of nitrous oxide and oxygen we find a spasm of the respiratory muscles of the chest-wall and larynx, bringing the breathing to a standstill even in much less painful procedures. This, if it occurs, makes it absolutely necessary to stop the operation, or the spasm will not depart. If this be *not* done, and one simply waits for the next breath, pallor supervenes very rapidly, and, the pulse failing secondarily, a very alarming syncope results. I am speaking of quite small children. It has happened to me on three occasions, and has threatened in others.

Now as to the administration itself. An average adult, breathing twenty-five to thirty cubic inches of gas at each respiration—say twenty times a minute—will require 9000 cubic inches, or nearly forty gallons every quarter of an hour. Two fifty-gallon bottles of gas and one twenty-four-gallon bottle of oxygen will be required for a half hour's operation. The three bottles are very heavy to carry, and the actual cost of the gases used will be ten shillings at the least, even in London.

To obtain anything approaching accuracy in the percentage proportion of the mixture, the double gas-bag of Dr. Hewitt's apparatus must *hang free of the couch*, and must not rest upon a bed or pillow, because in that event its own weight will force unknown proportions of oxygen through the apertures. The patient must be first of all placed in the exact position which is needed for the operation, for no movement of the head and shoulders can be permitted after commencing the administration, or else the position of the bag will be interfered with, and the anæsthetist's control of the foot-keys will be imperfect. In fact, everything is upset by moving the patient's position after starting, regular rhythm of breathing being a very important factor.

The actual administration, in my opinion, requires more skill and experience of the significance of slight alterations in colour and breathing than the other anæsthetics, and I do not anticipate that its possibilities are very large, as they are limited by (1) the production of only a moderately profound anæsthesia, with tendencies to muscular rigidity and reflexes; (2) its unsuitability for young children. I do not recommend it now for adenoids. On the other hand, as an addition to our resources for examination of the pelvis in gynæcological work, for those who are about to take ether a few days after for a major operation, and in selected subjects during operations lasting, say, ten to fifteen minutes, it fulfils every requirement.

Finally, from my experience of a thorough trial of the mixture in surgery, I must say that, though we have not discovered in this method an inhalation which can in any general sense supplant the use of ether or chloroform, we probably have one which has distinct advantages over gas or gas and ether for operations of minor and of very moderate severity.

Treatment of Retropharyngeal Abscess.—

Dr. Johann v. Bokay, translated by Dr. Plummer ('Annals of Gynæcology and Pediatry, May, 1899).

Immediately after the appearance of the first signs of retropharyngeal lymphadenitis, a bladder of ice or cold compresses should be applied to the submaxillary region of the side occupied by the adenitis. If the tumefaction does not diminish under this treatment, and if soft places, indicating that suppuration is inevitable, are also found, the ice should be replaced by Preissnitz's compresses, since, by the use of warm poultices which hasten suppuration, the abscess may be opened sooner.

Painting the uvula and pharynx with the tincture of iodine or the iodised solution of iodide of potassium, extolled by Schmitz (1873) as resolvents of retropharyngeal adenitis, is no longer in use.

Up to 1888, the retropharyngeal idiopathic abscess was always opened through the oral cavity, and, with some trifling modifications, the physicians of every country operated in the same manner. From 1854 until the present time, this procedure,—incision through the oral cavity,—has been in use at the Stèphanie Children's Hospital of Budapest.

Formerly we incised abscesses with a narrow pointed bistoury, whose blade was wrapped almost to the point with strips of adhesive plaster. Since 1874, we have used, exclusively, Schmitz's pharyngotome, which seems to us more convenient than that of Carstens'. The child is seated, with the head straight, on the knees of the nurse or mother, in such a way that its head and back

are well supported against the chest of the person who holds it, and who, with her arms encloses the body and arms of the little patient, thus rendering enveloping in a cloth unnecessary. An assistant, placed behind, holds the child's head and exercises a moderate pressure with his fingers on the sub- and post-maxillary region in order to immobilise the abscess as much as possible and render its incision less difficult. After opening the mouth sufficiently, we insert, in the pharynx, the index finger of the left hand, which serves as a guide for the introduction of the pharyngotome or concealed bistoury held in the right hand. After carrying the instrument the length of the finger as far as the collection, it is forced into the most dependent part of the abscess. Temoin proposes to evacuate abscesses of large size twice; first to make a puncture with a trocar to drain part of the pus, and afterwards to enlarge the incision with the bistoury to empty the whole collection. As soon as the incision is made, the child's head is bent against its chest in order to facilitate the flowing of the pus through the pharynx and the mouth. To obtain a still more complete evacuation of the collection, the index finger is again introduced into the pharynx, and a soft pressure from below upwards is made upon the deepest part of the abscess, the assistant at the same time pressing on the corresponding part of the neck. In my opinion, however, this little operation, very simple in itself, must be executed with a certain rapidity. If by chance the first attempt at incision miscarries, one should wait some seconds before making a second effort.

In 1888 H. Burckhardt, a physician in Stuttgart, published an article in which, by virtue of three cases, he proposed to handle retropharyngeal abscesses no longer through the mouth, but by an internal incision, made opposite the pharyngeal cavity on the internal edge of the sterno-mastoid, even with the larynx. The external incision first practised by Saint Germain in 1872, then by Etienne of Edinburgh in 1877, was adopted as a general method of treatment for retropharyngeal abscesses, by Cheyne in 1881. Sacchi, 1892, and Reverdin had recourse to this procedure with success in several cases. Burckhardt thinks that his method is destined to ameliorate the prognosis of retropharyngeal abscesses, and that it is particularly indicated for small children when these abscesses are very extensive and deeply situated. Finally it may be said in regard to this author that the procedure in question would be particularly advantageous in the metastatic retropharyngeal abscesses and those arising from inflammation of the vertebræ.

The principal objections that Burckhardt made to the oral cavity is that when the abscess is evacuated through the mouth, it is difficult to keep the incision open, that post-operative treatment cannot be conducted antiseptically, and that, according to Professor König's expression, the treatment of these abscesses does not correspond to the modern ideal of the treatment of abscesses in general. The justice of these remarks should be admitted, of course, but at the same time I wish to add that the objections made to the oral cavity have not, really, very great importance. It is true that it is difficult to keep the incision open, and that in the course of the malady one is sometimes obliged to repeat the operation two, three, or even four times; but it is also certain, as is already sufficiently shown by the slightly increased mortality in our statistics, that these multiple interventions neither influence nor aggravate the malady. As to the treatment of the abscess after its opening through the mouth, it hardly admits of anything else than washing the throat from time to time with water or a weak antiseptic solution (boric acid) and the systematic expulsion of the contents of the abscess with the finger. Although these therapeutic measures may be very far from the modern ideal of the treatment of abscesses, they have, nevertheless, given very satisfactory results up to the present time. Therefore, the external incision does not seem to me preferable to the incision through the oral cavity, for the reason that Burckhardt's procedure is a delicate operation and one which every physician cannot execute under all circumstances. Indecision or delay in retropharyngeal abscesses may cause the patient's life. But I willingly confess that this procedure seems to me destined to have a great future in the operative treatment of retropharyngeal abscesses of traumatic origin or consecutive upon an inflammation of the cervical vertebræ.

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NOTICE.

THE PATHOLOGY OF PYREXIA.*

BY
W. HALE WHITE, M.D., F.R.C.P.,
Physician to Guy's Hospital. .

GENTLEMEN,—I have first to thank you for the honour you have done me in asking me to read a paper before your Society—I believe, the most ancient medical society in the kingdom—and, secondly, for your kindness in inviting me to give you a condensed account of the Croonian Lectures I delivered before the Royal College of Physicians eighteen months ago.

It is well known that the internal temperature of all of us is, at the present moment, about 98½, and that the reason is that the production of heat, which is chiefly carried on in the muscles of our body, is accurately counterbalanced by the loss, which takes place, chiefly from the skin, with the result that the internal temperature is con- stant; and we know that the loss which takes place from the skin takes place by *radiation* and *evaporation*. When, then, the internal tempera- ture rises, as it does in fever, it may rise above 98½, for one or both of two reasons. Either it will rise because the production of heat is in- creased, or because the loss by radiation and eva- poration from our skin is diminished, and there are no other possible ways in which it can rise to any very great extent.

Now, if it must rise for one of those two reasons, it follows that if, in any person whose internal temperature is raised, I can prove to you that when it is up his loss of heat by radiation and evaporation is greater than when his internal tem- perature is normal, the production of heat in his body must have increased, because when his in- ternal temperature was raised he was actually losing heat faster than when it was down. Therefore he must be producing more heat than is normal. On the other hand, if, when the internal temperature

* Being a Paper read at the Leicester Medical Society, March 3rd, 1899.

is up, the loss of heat is diminished, some at least of the rise must have been due to a diminished loss of heat.

And I will begin by proving to you that in some fevers the internal temperature rises because the production of heat is increased, and in other fevers it rises because the loss is diminished.

The loss by radiation clearly depends upon the temperature of the skin, that is, the surface temperature. The higher the temperature of the skin the more rapid the loss. To take the temperature of the skin I have had several thermometers made. Here is a case full of them. [Thermometers produced.] The bulb is flat, so that it will lie on the skin. All you have to do is to place the thermometer on the skin, as I am doing, and you will see the mercury rise rapidly. So, with this kind of thermometer, I can easily show whether the temperature of the skin is raised or not, and therefore whether the loss of radiation has altered.

To test the amount of perspiration a patient is losing, these glass boxes, which are the result of many months' experiments, were devised. Calcium chloride is fused on to the bottom of the box, the lid of which has been previously proved to be absolutely air-tight. The box, with its lid on, is weighed, the lid is taken off, and the box is instantly inverted on the skin, and kept in position with a slight pressure on some part of the body for a specified time—in my experiments I always put it on the abdomen near the umbilicus for ten minutes—and then it is taken off, and the lid is instantly put on. It is again weighed, and the increase in weight gives the amount of perspiration that has been excreted from that skin area in the ten minutes by the patient, for it has all been absorbed by the calcium chloride. By observation when the temperature is raised in fever, and when it is down a few days later, you can see in which case the patient is secreting the greater amount of sweat, that is to say, in which case he is losing heat by evaporation most rapidly.

Now, I will show you on the screen the result of observations with regard to some fevers. The first I will take is typhoid fever. Case 3 is a good example. When this patient's mouth temperature was 103 his surface temperature was 97.2, and he was secreting 1.4 milligrammes of sweat from a given area of his abdomen in ten minutes. Twelve days later, when his mouth temperature was 98.8,

his surface temperature was 95.2, and the amount of sweat was 7.2 milligrammes. Therefore, you see, with a rise of 4.2 of internal temperature, there was only a rise of 2.0 surface temperature, consequently the loss by radiation was not increased proportionate to the rise of internal temperature, therefore part of the rise of internal temperature must have been due to diminished loss by radiation. Further, he sweated less, and was therefore losing less by evaporation when his internal temperature was up than when it was down. Therefore he was losing during his fever less heat by radiation and conduction, and less by evaporation of sweat. Therefore one mode, at least in typhoid fever, by which the temperature is raised, is that the loss of heat during the fever is diminished.

That is a very interesting fact, as the peculiarity of typhoid fever is that you have a long-lasting disease, with a high temperature. There recently died in one of the wards a girl, suffering from typhoid, in whom the temperature was raised for seven weeks. It is clearly less strain on the animal economy to have the temperature raised by diminishing the loss than by increasing production of heat, and these experiments may explain how it is that such a long, severe fever as typhoid has a mortality of only 10 per cent. Another point of interest is that it is agreed that the best way to lower the temperature in typhoid fever is by means of the application of cold, that is, by increasing the loss, which seems natural when we learn that the temperature is raised because the loss is diminished.

The next series is that of five cases of pneumonia. Let us consider the last in detail. Here the surface temperature, you see, rises during the fever 2.2 degs. more than the internal temperature. That is very considerable indeed. And you will see that the sweat, when the temperature was up, was secreted at the rate of 3.5 milligrames in ten minutes. That is not less than in health, as I know from observation on healthy individuals. Thus in pneumonia, when the internal temperature is up, you have the surface temperature greatly raised, and no decrease in the amount of sweat. What follows therefore is, that the loss of heat during the period of pyrexia in pneumonia is enormously increased, so that in pneumonia, as, when the

internal temperature is up, the loss of heat is increased out of proportion to the rise, there must be an enormous amount of heat produced, because the internal temperature is raised, in spite of the fact that the loss of heat is increased. This method of raising temperature is extravagant of the energy of the body, and that is interesting when we remember that pneumonia is, compared with typhoid, a short, specific fever. My cases further show that the sweating which accompanies the crisis in pneumonia lasts some days after the temperature has fallen, and also that the sweating at the crisis may be enormous, for in Case 4, 40 milligrammes were secreted in ten minutes in that area, which before the crisis was only secreting 2 milligrammes.

The next fever in which I performed experiments was erysipelas. We will take Case 2 as an instance. During the fever you see that the surface temperature rose nearly a degree more than the internal temperature, and that the amount of sweat secreted during the fever was greater than it was when the temperature had fallen. So that here, again, by radiation and conduction, and by evaporation, that patient was losing more heat when his internal temperature was raised, in spite of the fact that it was raised. That, of course, means that during the rise of internal temperature his production of heat must be very much increased. If you have to heat up a room with an ordinary fire, and you open the window at the same time, and so increase the loss of heat, you clearly have to make up a bigger fire to obtain a very much greater production of heat to raise the temperature of the room. So that we learn that in erysipelas the temperature is raised because the production of heat is increased.

Next, I show you the results from two cases of pyrexia with suppuration. Let us take the second. During the pyrexia the surface temperature rose less than the internal. The amount of sweat was less when the internal temperature was up than when it was down. So that, as when this patient's internal temperature was raised his loss of heat from all sources was less than when his internal temperature was down, it follows that part of his rise of internal temperature must have been due to a diminution of the loss of heat.

I have, I think, shown you that typhoid micro-organisms and suppurative micro-organisms di-

minish the loss of heat, and so cause the temperature of the patient to rise, that pneumonic micro-organisms and erysipelas micro-organisms increase the production of heat, and so cause the temperature to rise, and therefore the process by which pyrexia is produced is different in different fevers. That is, it seems to me, an important point in the pathology of fever.

Now, we will take quite a different point. Many observers have shown that damage to the corpus striatum raises the internal temperature, and this fact is so well established that I need not refer to details. I show you on the screen the results of twenty-seven experiments I performed upon rabbits, and you will see sometimes it rose four or five degrees as a result of the operation, and the chart you now see gives you a good idea of the rise. Many instances are on record in which in man after hæmorrhage into the corpus striatum, the internal temperature has been raised; and in 1894 I published two cases which showed that if, after a hæmorrhage takes place into one corpus striatum it is raised, it may be higher in the opposite or paralysed axilla than in the axilla on the non-paralysed side, and since I began observations on the amount of sweat secreted two more such cases have come under observation. In them the paralysed axilla had invariably a higher temperature than the other. The surface temperature in one was on the paralysed side the same as on the normal side. In the other case every observation showed the surface temperature was higher on the paralysed than on the unparalysed side. With regard to sweat; in one case there was an enormous excess of sweat on the paralysed side as contrasted with the unparalysed side; actually, as you can see on the screen, 19.9 milligrammes of sweat more, from a given area in ten minutes, on the paralysed side than on the sound side; in the other case also there was an excess of sweat on the unparalysed side. So we learn that the surface temperature on the paralysed side was never less, but sometimes greater, on the paralysed side. But the amount of sweat secreted on the paralysed side is much greater. Clearly, therefore, the loss of heat from the paralysed side is very much greater than the loss of heat from the unparalysed side. But the internal temperature—the axillary temperature is the internal temperature—is higher on the paralysed side. So with a

higher internal temperature you have got a very much greater loss of heat, therefore the paralysed muscles must be producing considerably more heat than those which are not paralysed. That is to say, a cerebral lesion which has paralysed the motor function of muscle has excited the thermogenetic.

I now turn to another point. Some attempts have been made to find out whether in man the amount of CO_2 exhaled is increased during fever. Many observations will have to be made on the different fevers before the results can be accepted as final, but, so far as they go, the figures show that the amount of CO_2 excreted during the fever is not increased. I have shown on the screen some results obtained by Lœwy from a patient suffering from typhoid fever, and you will see that when the temperature was raised the output of CO_2 in cubic centimetres per minute was on different occasions 183, 221, 190, 205, 198, and 248. Three weeks later, when the patient's temperature was normal, the output of CO_2 was 277. Here clearly there is no increased output of CO_2 during the fever, and Kraus's observations confirm this. I will next show you the results of some observations Mr. Hopkins and I made on the gaseous exchange in pyrexia due to cerebral lesions. You see that the first rabbit was giving off 2.94, 3.26, and 2.64 grammes of CO_2 per hour on three occasions before any operation, then the right corpus striatum was punctured, in consequence of this the temperature rose 2.8° F., but the excretion of CO_2 was 2.98, and if you will look at the other experiments you will see that the results are the same. Therefore, as far as our present evidence goes in pyrexia due to fever, and in that due to cerebral lesions—that is to say, pathological pyrexia—the CO_2 excretion is not increased.

It will be interesting to compare these results with those obtained from hybernating animals, and I throw on the screen some results which Dr. Pembrey and I have obtained from dormice. A dormouse was put in a ventilated chamber, the temperature of which could be raised or lowered because it was surrounded with water. We made a number of observations to show that when the animal was cooled it hybernated, and its rectal temperature fell many degrees, that when it was warmed again its rectal temperature rose again to

between 93 and 94, which is the normal rectal temperature for a dormouse when fully awake. Take the first animal; before it hybernated it was discharging on the average 200 decigrammes of CO_2 per fifteen minutes; we cooled it, and so it hybernated, and consequently its temperature sank, and the excretion of CO_2 sank to 59, and even remained down as low as 20 and 23 when we first began to warm it. Gradually, however, it awoke as it was warmed, its temperature rose, and the excretion of CO_2 mounted to over 300. Other experiments gave the same results.

We learn, therefore, that when temperature undergoes wide variation in health, the higher the temperature the greater the excretion of CO_2, but that when the rise is pathological there is no increased excretion of CO_2. This goes to show what is probably true, namely, that the metabolic processes of pyrexia due to cerebral lesions and of those due to fever are quite different from those of health, and not to mere exaggeration of these.

You will remember that the first conclusion to which we arrived was that when the internal temperature is raised in fever the mode in which it is raised differs in different fevers. I think I can show you that there are differences in the way in which temperature is maintained. It is well known that exercise raises the internal temperature. Sawing wood for six hours has been found to raise a healthy man's internal temperature over 2°. Clifford Allbutt has shown that mountain-climbing raises it, and many observations have shown that work raises the internal temperature of omnibus horses. Dr. Garrod and I made some observations on each other to see how our loss of heat behaved when, owing to exercise, the internal temperature rose. We took the internal temperature in the mouth, perhaps more exact results would have been obtained if it had been taken in the rectum, but we were not engaged in showing that the internal temperature rose after exercise, for that is well known, but we were studying the variations of loss induced by exercise. My internal temperature was much less affected by exercise than Dr. Garrod's. This you can easily see by the figures I throw on the screen, and you will also notice that he sweated very little in comparison with me. Six experiments were made on both of us, his average increased amount of sweat

was 3.5 milligrammes, mine was 7.05 from the same area in the same time; on the other hand, his surface temperature was considerably raised by exercise, while mine was hardly altered. Apparently, therefore, we are different in our methods of accommodating the loss of heat to the increased production due to muscular exercise; he chiefly increased by radiating and conducting power, I chiefly increased my loss by evaporation.

Now, I put before you another table, it shows observations taken upon both of us at the same time after dinner, and you will see that on four out of five occasions I sweated more than he did. The whole amount I perspired during the five observations was 15.3 milligrammes, but his whole amount was only 11.1 from the same area in the same time, so I perspired 38 per cent. more than he did. Four times out of five my surface temperature was higher than his, on two occasions as much as 3.6° F. The internal temperature of us both was the same. Therefore, as my surface temperature was higher, and the amount of sweat I secreted was greater, I lost from radiation, conduction, and evaporation faster than he, and therefore my production of heat per kilogramme of my body-weight must have been greater than his. We consequently learn healthy individuals vary very much in their produciton and loss of heat.

The next point to which I would direct your attention is some figures on the effect of a hot bath. By staying in a hot bath, at a temperature cooling from 112° F. to 108° F., for fourteen minutes, I raised my mouth temperature from 98.2° F. to 103.2° F. But, in the first ten minutes after the bath, a glass calcium chloride box showed the enormous sweating, of 185.7 milligrammes in ten minutes from the skin equal to the area of the box, the rapid evaporation of so much sweat actually cooled the surface of the skin from 94.5° to 88.7° F., so we learn that, when the body is very energetically lowering its temperature by evaporation, this very process may so lower the surface temperature as to diminish the loss of heat from radiation and conduction. The figures further show that half an hour after my internal temperature had been raised to 103.2 by the bath, it had sunk to 98.6, and an hour and a quarter after the amount of sweat being secreted was normal. I have done other experiments which confirm this, and you will, I am sure, agree with me that it

illustrates admirably the wonderful power the body has of protecting itself against rises of temperature due to external causes.

Treatment naturally comes towards the end of a paper, and therefore the remaining figures I show you bear on the treatment of fever. The complete burning of a gramme of albumen liberates sufficient heat to raise 5500 grammes of water through one degree centigrade; but in our bodies albumen is not completely broken down, it is only broken down to urea, and a gramme of albumen broken down to urea yields about 4000 gramme calories. The energy-yielding power of a gramme of fat is about 9500 gramme calories, and that of a gramme of carbo-hydrates about 4000 gramme calories. If we know the amount of nitrogen and carbon excreted by an animal, we can calculate back what must have been the amounts of proteid, fat, and carbo-hydrate to produce these quantities of carbon and nitrogen, and then we see how much energy this breaking down must have yielded. We can compare results if the animals are kept quiet in a cage, for then what little energy is converted into motion is the same in each case, and the energy of the cardiac and respiratory muscular contractions need not be considered, for that chiefly becomes heat, as it has to overcome friction. If you will look at these figures taken from May, you will see that when a starving rabbit's temperature is raised by fever, the increased metabolism falls on the proteid tissues, the kilogramme calories liberated from them mounting from 54 to 70, while those from the fat remain the same. The next experiment of May's which I give you shows that if you administer to a starving rabbit sugar it enormously saves the break-down of the creature's fats, and, to some extent, its proteids (I need hardly say that by analysis after the animal was killed any sugar not used by it was estimated and allowed for), and the last table I put before you shows that giving sugar to a fevered animal diminishes the break-down of fats by three quarters and proteids by a half. These experiments of May's seem to me to be some of the most important in experimental medicine, for they show us the explanation of the fact well known for a long while, that farinaceous foods are the best for fever.

THE PRINCIPLES THAT SHOULD GUIDE US IN THE TREATMENT OF TUBERCULAR DISEASE OF THE HIP-JOINT.

BY

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WHEN in diseases of the hip-joint, pain on movement becomes a concomitant feature, the thigh is flexed and adducted on the pelvis, and is retained firmly in that position by the contraction of the several flexor and adductor muscles. Any attempt to straighten the limb produces a rotation of the pelvis around both a transverse and an antero posterior axis. The former is the more conspicuous, and an excessive extension of the lumbar, lumbo-sacral, and sacro-iliac joints results, to which the unmeaning, indefinite, and incomprehensive term "lordosis" is commonly applied. You naturally ask yourself why and how it comes about that the thigh is retained fixed upon the pelvis in this position. You may remember my pointing out that the description of the range of movements of the hip-joint as contained in works on anatomy is incorrect in some particulars. For instance, flexion of the hip-joint is described as being limited by the impact of the soft parts of the front of the thigh against the abdominal wall. That this is not the case can be readily shown on the living body. In the normal subject flexion of the hip-joint but slightly exceeds in its range a right angle. The flexion of the anatomist is apparent and not real, and comprises flexion of the lumbar, lumbo-sacral, and sacro-iliac joints as well as of the hip-joint. Flexion of the hip-joint is limited not by the impact of the thigh against the abdomen, but of the front of the neck of the femur against the edge of the acetabulum. If the thigh is forcibly flexed by a force acting at the end of the femur, or at the foot, the leg being straight, the length of the limb up to the acetabular margin becomes the long arm of the lever whose short arm corresponds to the head and

that portion of the neck of the femur beyond the acetabular margin or fulcrum, the mechanics being those of a lever of the first order.

If sufficient force is exerted suddenly upon the lower end of the femur in this direction either the head of the bone is forced out of the cavity, or its neck yields, or the epiphysial line breaks at its junction with the neck. The particular injury varies with the age and vitality of the patient and consequently with the relative strength of the bone and soft parts. I showed also that if adduction of the thigh is associated with flexion it modifies very considerably the size of the angle through which flexion can take place. *Practically, if flexion and adduction are combined, the angle of possible flexion varies inversely with the amount of adduction.* It is surprising how slight is the range of possible flexion if a definite amount of adduction coexists. Even the small extent of adduction which is present in walking, because of the rotation of the pelvis around an antero-posterior axis in order to bring the superjacent weight of the trunk over the supporting foot, if associated with such a flexion of the trunk on the thigh as exists when a load is carried on the back, produces an alternating fixation of the pelvis on each femur while the weight is being supported by it owing to the impact of the neck of the femur against the acetabular margin. This you can readily recognise by examining the hip-joint of such a labourer. A very distinct facet is found upon the upper and anterior part of the neck of the femur and a corresponding articular surface on the margin of the acetabulum. The facet on the neck of the femur is so clearly marked in most of the bones used in our medical schools that it seems quite unintelligible how it can have escaped the eye of the anatomist, who, however, usually prefers to exhibit a wonderful desire to observe details of the most minute nature rather than more obvious and extensive conditions. The advantages in security and in economy of expenditure of energy to labourers from the presence of this limiting mechanism is very great indeed. Apart from the changes just described as being consequent upon the habitual forcible impact of the neck of the femur against the margin of the acetabulum, there exists in the head of the femur and in the acetabular cavity of these labourers other modifi-

cations in form due to a specialisation of the direction in which excessive force is exerted.

These I merely refer to as they do not concern the point I wish particularly to call attention to, which is this, viz. *that in disease of the hip-joint the thigh is retained in a position of flexion and adduction for the reason that in this posture the femur is fixed by its muscles upon the pelvis by the impact of the neck of the femur against the acetabular margin, and any movement of inflamed surfaces upon one another which would produce pain is reduced by it to a minimum.* Now the force exerted by the muscles in retaining the femur in this position of fixation on the pelvis varies practically with the extent and locality of the disease in the joint. By its action it tends to force the head of the bone outwards, backwards and upwards out of the acetabular cavity. This, under normal circumstances, is resisted by atmospheric pressure, the ligamentum teres and by surrounding muscles, which serve as ties to the joint. This tendency to the separation of the articular surfaces from one another relieves them from pressure which would probably increase the extent of the disease involving them. On this account, though disadvantageous to the mechanics of the individual as regards locomotion, this position is the best possible from the point of view of recovery from the affection. The disease of the bones and of the ligaments, when advanced, permits of the gradual displacement of the head of the femur. This is accompanied by a considerable amount of destruction of the opposing bones where they impact forcibly against one another. If we wish to have a clear conception of this disease it is most important that we should recognise clearly that the position of flexion and adduction of the hip-joint is assumed to save the patient from pain, and understand exactly the means by which it is effected.

In tubercular disease of the hip-joint, as of other joints, we endeavour as far as we can:

1. To keep the joint at rest in the position that is most advantageous to the patient, should it finally ankylose or its movements become limited. In the case of the hip-joint this is one of extension.

2. To avoid as much as possible any damage to the opposing inflamed articular surfaces by the transmission of continuous or intermittent force along the femur to the innominate bone.

3. To improve the health of the patient by suitable diet and change of air, and to increase his vital capacity.

4. To influence prejudicially the growth of the tubercular organisms by the internal administration of such powerful germicides as mercury, arsenic, and the iodides of sodium, potassium, and ammonium.

5. In the event of the disease progressing, as evidenced by the presence of a collection of fluid, loss of weight, the formation of depreciating progressive deformity, the appearance of a focus of disease elsewhere, &c., an operation should be performed, the objects of which are (*a*) to effect as complete a removal of the tubercular material as possible, and (*b*) to retain the bones in such a mutual relationship to one another as will interfere to the smallest possible extent with the normal mechanics of the pelvis and lower extremity and with the subsequent convenient physical relationship of the individual to surroundings.

We will consider the application of these several principles more or less in this order.

The usual treatment of a case of hip-joint disease, in which the femur is flexed and adducted on the pelvis, is in the first instance to attempt to extend and abduct the leg upon the pelvis by means of a gradual process of extension by weights connected to it. This is described technically as "weight extension." Practically this force is exerted upon the lower end of the femur and tends to pull it downwards and outwards, the body being regarded as occupying the supine position. Resistance to this extension and abduction of the limb on the pelvis is offered in a varying extent by all the soft parts which, as in the case of the muscles, by their active contraction produced the flexion and adduction of the femur and, as in the case of the ligaments, fasciae, and skin, were relaxed and passively abbreviated by this active muscular contraction. In either case the shortening up of these structures, either from active or passive causes, is the obstacle to the production of such a degree of abduction and extension of the limb as is required to restore the limb to a condition of symmetrical extension, and the amount of resistance offered varies with the duration of their contraction. This resistance now becomes the fulcrum of the lever, whose short arm corresponds to the portion of the femur above

it, through the upper limit of which the force exerted by the weight on the lower end of the femur is transmitted to the pelvis.

If the soft parts yield to the strain exerted upon them, a variable additional amount of pressure is sustained by the opposing inflamed articular surfaces of the head of the femur and acetabulum. It is perhaps not excessive, or, in other words, it is not enough to be harmful.

The mechanics of the hip-joint under these circumstances seem to be so little understood that many surgeons appear to believe that by exercising traction by weights upon the leg they separate or tend to separate the opposing articular surfaces of the femur and acetabulum from one another and to assist the recovery by relieving them from a pressure which favours the progress of the disease. If, on the contrary, the resistance offered by the contracted soft parts is great, it is clear that the limb can only be brought straight either by the mutual destruction of the opposing surfaces of the head of the femur and acetabulum or by the displacement of the head of the bone upwards and backwards on the dorsum ilii, the marginal area of the acetabulum yielding to the pressure exerted upon it. The pressure which is in this manner exerted by the diseased bones on one another is injurious to the individual, in that it favours the progress of the disease and the development of deformity and mechanical disability. It is our object to avoid as much as possible this transmission of excessive pressure through inflamed and diseased bones.

Before applying what is called weight extension indiscriminately, the surgeon has to consider carefully whether the mechanical conditions are such as justify him in doing so, or whether he would not consult his patient's interests most by effecting the restoration of the limb to the position desired, and avoid further damage to the joint by an operative procedure, the object of which is to remove the resistance by dividing it. Should this course appear advisable, the more or less complete erasion of the disease from the joint may usually be advantageously effected at the same time. It is also necessary to bear in mind that though the resistance may be overcome sufficiently to allow of the limb being brought into a position of extension parallel to its fellow, the presence of much disease will, even if recovery takes place,

result in the union of the forcibly opposed surfaces to one another by fibrous tissue, or even by bone, the joint ceasing to exist mechanically.

Again, if the head of the bone is being displaced backwards and upwards on the dorsum ilii, or if it has already escaped beyond the limits of the original acetabular cavity, it is evident that some procedure must be undertaken in addition to the division of the muscles and ligaments and the erasion of the disease from the joint.

How can this be best done?

The method of procedure which I adopt is that I devised in order to meet the somewhat analogous mechanical conditions that exist in congenital dorsal dislocation of the hip-joint or in acquired dislocation of long standing.

Though there are many similarities between these deformities there are also certain marked differences. In the dorsal dislocation which results from tubercular disease of this joint, the thigh is fixed in a position of flexion and adduction. Consequently during locomotion the pelvis is rotated around two axes. It is so rotated around a transverse axis that the lumbar, lumbo-sacral, and sacro-iliac joints are in a position of over-extension, constituting the appearance which has been habitually described as "lordosis." This position, besides being one of great mechanical disability, is also very deforming both when the patient is standing and walking. The state of affairs resulting from dislocation from disease possesses an advantage over that arising congenitally, from the fact that in the former there is usually no free movement between the two bones, as is the case in the latter. This is effected by the progressive contraction of the muscles and ligaments about the joint, and often by the direct union of the deformed diseased head to the opposing surface of the ilium by dense fibrous tissue, or even by bone. Once the disease has disappeared and firm union has taken place, force is transmitted readily and directly from bone to bone, while the physical disability is relatively smaller than one would expect under the circumstances, though the deformity is very considerable.

But besides the rotation around a transverse axis, due to the flexion of the hip-joint, the pelvis is also rotated around an antero-posterior one in consequence of the adduction of the femur upon it, and it is the latter rotation which adds largely

to the physical disability and deformity. In this condition the pelvis is raised on the side of the deformity considerably above the line it occupies in the healthy limb.

In congenital dislocation there is no irresistible adduction, and the head of the femur is connected to the pelvis only indirectly by ligaments, along which the superjacent weight of the trunk is transmitted. In it the pelvis is rotated around a transverse axis to such an extent as to produce the over-extension called lordosis, because the false joint, or rather the area of the ilium over which the head of the femur plays, lies behind the transverse axis of pelvic rotation. The rotation of the pelvis around an antero-posterior axis is in a direction the reverse of that present in disease, the patient dropping the pelvis on the side of the dislocation till the movement is limited by the resistance offered by the ligaments of the joint. In dealing with this displacement and making a secure moveable joint in front of the position of the normal acetabulum, anterior to the transverse axis around which the pelvis rotates, though muscles generally require to be freely divided it is because they are shortened to accommodate themselves to the progressive upward displacement of the head of the femur, and to the consequent diminution in the interval between their points of attachment, and not as the result of any habitual active contraction on their part as is the case in disease of the same joint. The operative measures I employ in such cases of flexion and adduction of the diseased hip joint as seem from one reason or another to require treatment other than that of weight extension are the following:

A transverse incision is made along the upper limit of the great trochanter, from a point corresponding to the outer margin of the iliacus muscle backwards beyond the posterior limit of the trochanter. The several muscles which are exposed by it are divided till the anterior and upper aspects of the hip-joint, or of the dislocated upper end of the femur, are freely exposed. The further treatment must vary with the conditions present, but roughly I will attempt to define them. If after the division of the several structures, which by their active and passive contraction have retained the limb in a flexed and adducted position, replacement of the limb in the extended

position can be readily effected, and if the disease in the joint does not appear to be extensive the divided muscles are united with silver wire, the wound is closed, and a double Thomas's splint is applied in the hope of obtaining a moveable joint when the tubercular trouble has disappeared. I use a double instead of a single splint in order to render it impossible, in the first instance, for the pelvis to rotate around an antero-posterior axis, and subsequently to prevent any chance of the child standing on either limb till the joint has been fully developed.

If, however, the surgeon considers that the disease of the joint is too extensive, or even if he is in doubt as to whether recovery will take place without complete erasion, he should explore the interior of the articulation thoroughly. This is done by cutting through the capsule immediately outside its attachment to the upper and anterior margin of the acetabulum. The ligamentum teres, if still continuous, is divided, and the head of the bone is dislocated forwards and outwards from the acetabulum. By doing this the whole interior of the joint is fully exposed. If the head of the bone is loose it is removed, diseased bone is carefully turned out, and any resulting cavity in the ilium or femur thoroughly cleansed, dried, and packed with solid iodoform. All infected synovial membrane is also dissected out. The sectional margins of the capsule and of the muscles are brought accurately together with silver wire, as being the suture least likely to cause irritation. The skin wound is closed, drainage being employed for twenty-four hours should it seem advisable.

If, however, the limb cannot be brought into a position of extension after dividing the soft parts, the thigh is rotated outwards, and the head of the bone or the stump of the neck is carried upwards and forwards till complete extension of the limb is effected, all retaining structures being divided. It then comes into relationship with the ilium at some point between the anterior inferior spine and the acetabular cavity. A depression is cut with a gouge in the outer surface of the ilium and a small aperture is drilled through the floor. Another hole is made through the base of the great trochanter, neck and head of the femur. Through these a silver wire is passed, the inner end of which is brought outwards over the front

of the joint and twisted securely to the outer end about its point of exit from the femur. By these means the head or the stump of the neck of the femur, which has been trimmed to a suitable shape by knife or rasp, or better still by a special cup-shaped cutting instrument made for me by Messrs. Down Bros., is retained in accurate apposition with the cavity cut in the ilium. In this case the margin of the divided capsule is sewn by silver wire to the portion of ilium in front of the new joint. When making a new joint the surgeon must take care not to attempt to lengthen the limb too much by lowering the level of the new joint, leaving muscles, &c., in a condition of strain or tension, otherwise movement is painful and limited, and the resulting articulation is not so perfect. It should be possible at the time of the operation to move the limb through its complete range of flexion without any resistance to the movement being experienced. The capsule, muscles, and skin are sutured as before.

When the upper end of the femur has been dislocated on to the dorsum ilii, this forward displacement of the head and the formation of a new joint have always to be effected.

Should the disease be very acute and extensive, and should there be collections of tubercular material in connection with it, it is often advisable to plug the infected areas with sulphur or iodoform gauze, and to postpone the wiring till the tubercular infection has been completely destroyed and the tissues have been restored to a thoroughly healthy condition. In this the surgeon must be influenced largely by the nature of the disease, the degree in which he is able to remove it, and by the general condition and surroundings of the patient. After three, four, or more weeks have elapsed since the operation, and the skin wound has healed firmly, movements of flexion are commenced and pursued frequently. The duration of this interval must vary with the extent of the original disease, the completeness with which it was removed, and the general condition of the patient. If movement is undertaken too early inflammation may be excited and tubercular reinfection result. At first the movements must be repeated very frequently, but the range must be small, this being increased gradually. Any appearance of irritation must be met by a temporary cessation of the passive move-

ments. An accommodating bone convexity and concavity, articular cartilage, a synovial membrane, &c., are gradually evolved in this way. After two or three months, or even much longer, the knot in the silver wire is exposed by an incision and the anterior loop is cut through internal to the knot. The wire is removed by exerting forcible traction on the twisted end. Then movements of adduction, abduction, and rotation are superadded, so that, after a lapse of some months, a ball and socket joint resembling very closely the original articulation in its anatomy and physiology is developed. During all this time the double splint is retained, and the child is not permitted to stand till at least nine to twelve months after the operation. If all goes well the new joint is then perfectly secure, and the whole superjacent weight of the body is transmitted through it without vertical play of the bones on one another. Any over-extension of the lumbar, lumbo-sacral, and sacro-iliac joints, (comprised under the term lordosis), which in the erect posture is consequent upon the difference in the length of the lateral supports, can be removed by compensating for the shortening. This compensation exerts upon the pelvis a force in an upward direction in front of the transverse axis of rotation, by means of which the lumbar, lumbo-sacral, and sacro-iliac joints can be flexed to a degree sufficient to obtain perfect symmetry of the pelvis and trunk.

The risk run in the attempt to obtain a new joint in this manner is that of keeping the tubercular trouble active, and it will take place occasionally in very feeble emaciated children, however thorough are the precautions of the surgeon in effecting its removal. Still, in spite of this, it offers the patient infinitely greater advantages, both from the point of view of the mechanics of the skeleton and freedom from disease, than any other method in use at the present time. If at the time of the operation the patient is free from infection, and if his general condition is satisfactory, there is very little risk of providing a new source or nidus for infection.

When the hip-joint is ankylosed, either by fibrous tissue or bone, the head or stump of the neck must be divided by means of a large gouge at its junction with the innominate bone, and then brought forward and *fixed by wire in an easy*

working relationship with a cavity cut above and in front of the position of the acetabulum. In this way is obtained a shorter limb with a freely movable joint instead of a longer limb which is ankylosed to the pelvis even in a position of complete extension.

I have found from experience that a new joint between the femur and innominate bone can be evolved in a high state of efficiency in the young subject only, and that other things being equal its degree of development varies inversely with the age at which the operation is performed.

Though I have confined myself in this lecture especially to the consideration of cases in which the hip-joint has become more or less fixed in a position of flexion and adduction, it is quite clear that the same methods of procedure apply largely when the leg being in a position of extension, suppuration with or without displacement, or enough ankylosis or disease to prevent movement have developed. The erasion of the joint and the formation, if necessary, of a new joint in front of the transverse axis of pelvic rotation is effected with more facility and with less shortening of the limb under these circumstances, and the result is better, especially as regards the range of abduction since the resistance to extension and abduction offered by the contraction of soft parts is completely absent.

Alcohol an Antidote for Carbolic Acid Poisoning.

—A. M. Phelps, in the 'New York Medical Journal' of January 14, 1899, calls attention to the antagonism between alcohol and carbolic acid. He states he has seen Dr. Powell, at the Post-Graduate Hospital, pour upon his hands pure carbolic acid and in a few minutes wash it away with alcohol, and no escharotic action followed. At the present time he frequently flushes abscess cavities with pure carbolic acid, and a few minutes later with pure alcohol. Phelps is of opinion that we have in alcohol a specific against the escharotic action of pure carbolic acid. The observations of Phelps and Powell are of interest, and merit the widest publicity, both in the profession and among the laity. The extended use of carbolic acid as a domestic remedy and in medical practice has increased the cases of poisoning by this drug. It is claimed that the acid taken into the stomach is immediately neutralised by alcohol.—*Medicine*, June, 1899.

MEETING OF THE SOCIETY OF ANÆSTHETISTS,

At 20 Hanover Square, March 17th, 1899,

Dr. DUDLEY BUXTON in the Chair.

THE PRESIDENT reminded the members that at the last meeting Mr. Burns and Mr. Hilliard read papers, and though neither of those gentlemen were present on the present occasion, and therefore would not be able to reply, it was competent for members to raise points connected with those papers. As Mr. Granville's paper dealt with practically the same subject, he would ask that gentleman to read it, and then the whole matter could be discussed afterwards.

Mr. GRANVILLE read the following paper on " A Case which ended fatally after the Administration of Gas and Oxygen and Chloroform ":—

The patient was a youth of seventeen, apparently quite healthy, rather tall for his age, and with a narrow chest. The heart and lungs were normal. The operation was for radical cure of varicocele. The patient was very much alarmed before the operation began.

The inhalation was commenced with gas, anæsthesia being readily induced. When under the influence of gas, oxygen was allowed to flow in freely, commencing about five points, and varying during the operation to eight points.

Oxygen apnœa, to a slight degree, occurred twice; there was no struggling, but the patient was at times rather dusky; the duskiness was relieved at once by an increased flow of oxygen. He was never cyanosed.

The gas and oxygen was continued for twenty minutes. It was then interrupted, owing to the supply of gases running short. I may here mention that the operation took about double the time that it was expected to do.

The patient was allowed to come right round. He moved, groaned, and the operation was temporarily suspended. His pupils became small, his breathing was regular, his pulse 116. Chloroform was then administered; after four or five minutes the pulse, which was being watched all the time, suddenly weakened. The chloroform was at once withdrawn. The pulse quickly be-

came imperceptible, the breathing continued deep and regular for about five minues longer.

I have a list of what was done to recover the patient. I will read this, not for its interest, but so that you may be able to judge if any important restorative measures were omitted. The tongue was drawn forward with forceps, and 5 minims of Liq. Strych., 15 minims of ether, were injected over the heart region.

As soon as the respirations shallowed, the patient was inverted, and artificial respiration commenced. It was continued for two hours. At this time, the period between the stoppage of the pulse and after the respiration ceased, the patient's colour was not good. He was dusky, and both lips and ears were blue. The operator opened a vein at the bend of the elbow, and blood flowed freely. After the blood-letting the patient's colour improved, but no heart action was present, and the breathing did not recommence. The colour of the patient's skin was very good, and, on pressing the blood out of the pink mucus membrane of the lips, it at once returned. This improvement was very marked. Hot-water bottles had been placed around the patient, and a brandy enema had been given. A strong electric current was applied, one pole over the heart, and the other over the neck. The groups of muscles reacted rigidly, and the artificial breathing appeared to be deepened.

The patient was gradually getting colder about the face, the heat of the limbs and body evidently being kept up by the water-bottles and blankets.

Post-mortem Nothing abnormal and everything healthy. The right ventricle was dilated, and the whole heart was congested. It was found that the ether had been injected into the thin layer of lung, which overlapped the heart more than usual.

The case appears to me to be interesting from three points of view, firstly, the anæsthetic used, namely, a combination of gas and oxygen and chloroform. Secondly, the absence of any definite post-mortem appearances, though this is, curiously enough, by no means uncommon in cases where a post-mortem is made after a death under an anæsthetic. The dilated condition of the heart found in this case, although interesting, cannot be looked upon as of great importance, as the fact that artificial respiration was performed for some time would be sufficient to cause it, although it

appeared to me that it was greater in degree than one would expect from that cause alone. Thirdly, the facts that the pulse, and the circulation generally, failed long before the respiration, would appear to indicate that the seat of the mischief was in the heart, and that the respiratory centres were unaffected. The long interval of time, nearly five minutes, which came between the failure of the pulse and the complete cessation of voluntary respiratory movement, clearly shows that these latter centres were quite free, and only failed when they were no longer nourished.

Taking the first point: continuing anæsthesia with chloroform after administering gas and oxygen. This case appears to show the inadvisability of such a procedure. I had before, and have since, used ether after gas and oxygen, and always successfully, and without untoward symptoms. In this case all reasonable precautions seem to have been taken—the patient was allowed to come round, the pupil was seen to be small and reacting. The chloroform was administered slowly, and in very gradually increasing quantity. The respiration, pulse, and pupil were carefully watched. And *yet*, with all these precautions, a fatal result was reached.

I have lately had the opportunity of getting the opinion of some of those who administer gas and oxygen in other than dental cases, and they all seem to have had unpleasant symptoms when continuing anæsthesia with chloroform, and to have come to the conclusion that the right thing is to use ether and ether only. With this conclusion, I need not say, I heartily agree.

On the second point—the cause of death. Here I can only theorise, and I shall be pleased to hear the views of those who have patiently listened to me. As far as I can see, this patient's heart became dilated during the administration of gas and oxygen, why I cannot say, as he was never cyanosed, and the oxygen was used freely. To this dilated, and, therefore, tired heart, an inhibitory message must have been brought from the nervous centres when the chloroform was administered, and from this inhibition the heart never recovered. As the chloroform was stopped at once on the pulse weakening, and the breathing continued after, it seems unlikely to me that there was much chloroform left in the lungs to act as a depressant, so that, I must believe, if the death

was due to the chloroform, that it was the first small dose taken into the lungs which caused the fatal result.

The gas and oxygen administered I look upon as a strong contributory factor, or, to use a legal phrase—which appears to me particularly fit—*it was accessory before the fact.*

In reply to questions, Mr. GRANVILLE said he used the drop-bottle and lint method—the open form of administration, and that the chloroform was given for three or four minutes.

Mr. BELLAMY GARDNER said he had a very strong feeling that it was possible that without the chloroform the patient might not have died; he would suggest that as gas and oxygen, at present, was more or less in embryo as a surgical anæsthetic, and as up to the present it had caused no fatalities, the case read by Mr. Granville should not go forth as an instance of death from gas and oxygen, and the chloroform be considered only to have contributed in a very slight degree to the unfortunate result.

Mr. NOBLE said that in connection with the cases which had been mentioned last month by Mr. Burns and Mr. Hilliard, he would like to narrate a case he had had. It was a dental operation. The patient was a man aged thirty-four, spare, and sallow complexioned. Gas and oxygen was administered by Hewitt's original apparatus. It was found necessary to allow the full amount of oxygen available by the apparatus to prevent cyanosis. When anæsthesia was complete the patient became distinctly cyanosed, and as the surgeon was about to extract the tooth the breathing ceased. There had been neither stertor nor twitching. The tongue was pulled forward and the thorax was compressed, and after an interval of about two minutes the breathing recommenced, and for a time was slow, shallow, and sighing. (He had since ascertained that a week previously nitrous oxide was administered to the patient for a minor surgical operation, and after a few respirations the breathing ceased for a brief interval.) The administration was continued, and, when almost complete, the patient again ceased breathing for an interval of a minute or so. He had no explanation to offer for these facts, but he would certainly have thrown in a larger quantity of oxygen if he had been using Hewitt's modified apparatus.

Dr. FLUX said he agreed with what Mr. Gardner said about the inadvisability of putting the case narrated by Mr. Granville as one of death from nitrous oxide and oxygen, that is to say, one in which the nitrous oxide and oxygen was the primary cause of the fatal termination. And he did so for the reason that to put anyone under chloroform required several minutes, and the anæsthesia did not seem to have lasted sufficiently long for the person to be unconscious through the chloroform. If sufficient chloroform was given to enable the person to be brought to unconsciousness before the effect of the gas or gases had passed off, the individual was rather liable, he thought, to the overwhelming influence of the chloroform.

Dr. SILK said that although he would be very strongly disposed to agree with what had been said about the inadvisability of attributing too great weight to the effects of the gas and oxygen in the case related by Mr. Granville, at the same time he thought it was rather important that they should not forget that the gas and oxygen *was* administered, in the face of the fact that just previously Mr. Bellamy Gardner had referred to occasional faintness under gas and oxygen. His (Dr. Silk's) own personal experience was that these cases were apt to develop some curious after-affects, which one did not always see after nitrous oxide anæsthesia alone. Dr. Flux had argued that it was unwise to attribute too great weight to the gas and oxygen as a causative agent, because there was not time for the chloroform to take effect, and because the patient had apparently recovered from the gas and oxygen. However, he (Dr. Silk) thought that after all was said and done, as far as their knowledge went, the question of recovery was merely a question of how the patient appeared to them. They did not know what was the effect of the oxygen circulating in the blood, or the effect of the nitrous oxide, and certainly he would not be disposed to say that the patient had recovered from the gas and oxygen for a considerable time after he had ceased to take it. Therefore there was a fallacy in the argument in favour of not attributing, or tending to attribute, any weight to the influence of the gas and oxygen. He could not pretend to have had any wide experience in the administration of gas and oxygen for surgical purposes. One was rather apt to over-

estimate the value of that particular combination. At the present moment it was in the experimental stage, in its infancy, and he did not think any very great good would be gained by giving gas and oxygen indiscriminately, as being *the* anæsthetic, leading to the impression that all other anæsthetics were out of date and of no service. In connection with the cases which had come under his own notice, he would like to mention one, because it seemed to him to be a sort of typical case in which this method might be of service. A very short time ago he was called upon to give an anæsthetic to a very old man, over seventy, who had been suffering for many years from diabetes, and it was proposed to amputate his leg for diabetic gangrene. He (Dr. Silk) demurred very much to give him the ordinary anæsthetic—chloroform or ether—because he was not at all comfortable about it, and the result was that he was given gas and oxygen. In that instance he must admit that the general effect was satisfactory, that is to say, the patient was completely relaxed, he felt no pain, and the general effect of the anæsthesia was good. So far, one was perfectly satisfied. The operation lasted between twenty and thirty minutes. With regard to the phenomena which occurred under the influence of the gas and oxygen, he would like to mention that at one time there was some slight blueness, and once or twice there was a tendency to apnœa, breathing ceased, but the colour did not change. He attributed that fact rather to excess of oxygen, but it was a symptom which, especially if the administrator was not used to it, was alarming. He took that to be a typical case in which that method of administration was likely to be of service.

Mr. TYRRELL thought gas and oxygen was a very useful anæsthetic. He agreed with Dr. Silk that it should not be pushed into every kind of operation. But there was one kind of case which it had been hinted that particular anæsthetic had been used in, but, as he thought, wrongly, namely, severe passive movements for breaking down joint adhesions. The great reason why he was against its use in those instances was that there was a great deal of after-pain, and, from the patient's point of view, it was not desirable to have a too rapid return to consciousness on the completion of the process. He had used it on several occasions, and, apart from the rigidity,

which he thought all administrators would own was obtained with gas and oxygen more than with gas and ether, the patient came round too quickly, and experienced a great amount of pain. In such cases it would be far better to keep to the old gas and ether. The great use of gas and oxygen was in the minor operations of surgery, such as the removal of small sebaceous cysts, small operations about the toes, dental work, &c., and in those cases in which the question was considered, "Shall an anæsthetic be given or not?" Some few months ago he gave gas and oxygen at St. Thomas's Hospital for a case of acute appendicitis, with general peritonitis. The man was so bad that it was absolutely unjustifiable to run the risk involved in giving chloroform or ether, and he accordingly gave him gas and oxygen. An incision of the abdomen was made, and the abdomen washed out. The man felt no pain, and there was no shock from the anæsthetic. In those cases he thought the gas and oxygen was of great use. Gas alone could not have been used in that case, its administration could not have continued long enough. The operation lasted about ten minutes. But he agreed with Dr. Silk that gas and oxygen should not be used simply as a hobby. It had its great use, and it should be kept for those occasions in which it was particularly indicated. As to the question of chloroform following gas and oxygen, he could not help thinking that it was probably better to keep to the ether following gas. One noticed that the breathing in gas and oxygen administration became to a certain extent shallow, and he took it that, from the physiological point of view, the danger from the chloroform was not due to the amount inspired, but to the absence of the proper amount being expired. In the case which had been narrated, he took it that chloroform was pent up in the system, and the patient had not sufficient strength left to get rid of it. If the chloroform could have been got out of him, he thought, he would probably have lived.

Mr. CROUCH said his excuse for speaking must be the remark which Dr. Silk had made, namely, that it was possible they did not yet know all about gas and oxygen. He could narrate a case which would, perhaps, throw some light on the matter. He had occasion, a fortnight ago, to give gas to a nurse at St. Thomas's Hospital, who was

suffering from a septic arm. He had no oxygen with him, so he gave gas with air. This took some time. The state of the patient was not alarming, the apex-beat was well within the nipple line, but it ran out two inches during the administration of the anæsthetic. He at once stopped the anæsthetic, and was relieved to see the patient recover. Immediately after that, within a few hours afterwards, he was asked to give an anæsthetic to a private patient, a girl who also had a septic condition, this time of the leg. Having learnt from his previous case that gas and air was dangerous for such a condition, he gave gas and oxygen. She remained of perfectly good colour all through, she was never cyanosed, and so good was her colour that a suspicion was present in the minds of some that she could not be completely under. The heart, after the previous experience, was examined the whole time, and the same thing happened—her heart dilated rapidly, notwithstanding that she kept such a good colour. He thought the case showed that it was possible to get a heart dilated when the patient kept of good colour.

Dr. McPhail (Brighton) said he had given gas and oxygen in about thirty cases, and in most of them he had had very satisfactory results indeed. He did not find the rigidity spoken of by Mr. Gardner much of a trouble. He found that where the lithotomy position was used, the assistant could hold the patient quite easily, there was no apparent struggling, and when the assistant was asked whether the patient was rigid, the reply was in the negative. He found vomiting in a certain number of cases. Vomiting of solid food took place in some, and in one he had to remove the face-piece. In other three cases where vomiting occurred he was not obliged to remove the face-piece; he tilted it to one side, and allowed the saliva and mucus to go out, then he was able to keep them under by practically pushing the gas a little. In two cases he had rather unpleasant symptoms, similar to that muscular spasm referred to by Mr. Gardner; he believed he pushed the gas, and did not give enough oxygen. The respiration suddenly became very faint indeed, the pupils were widely dilated, and in both cases he had to remove the face-piece. He left them for a couple of respirations, and then went on again with the administration. Beyond these, he had had no dangerous symptoms.

Mr. Granville said he gathered that Dr. Flux was of opinion that there had been an overdose of chloroform in his case; he could only say that the quantity given was less than half a drachm. The method used and the quantity absolutely precluded that theory. As to the idea that chloroform was pent up in the chest, he thought that was rather contra-indicated by the fact that breathing was not at first shallow, and that it continued for some time after the pulse weakened and stopped. He would take it that the sign of the chloroform acting upon the centres was that the pulse failed; but, as the respiration continued pretty freely, he would have thought that the chloroform in the lungs had been expelled. He was very grateful to Mr. Crouch for quoting the cases in which the heart was examined and found to be dilated; it rather bore out his theory as to the cause of death in these cases.

The President said that Mr. Bellamy Gardner's experience was, of course, interesting, and one welcomed experiences from other people. He (Dr. Dudley Buxton) had employed gas and oxygen for a good many years, both for surgical and dental work. He and Mr. Gardner agreed in regard to it in many points, though perhaps Mr. Gardner was more sanguine about the method than he (the President) was. Mr. Gardner said that patients never objected to a second anæsthesia with gas and oxygen; he was rather inclined to say that was not invariably his experience, because, though many people liked it, he had met with others who objected strongly to having it a second time, and chiefly because of the after-nausea. One found in a certain number of people—why, it was difficult to say—there was a distinct nausea; the over-eating boy vomited after it, it was true, but so also did the old lady and the old man, who did not over-eat, and in whom there was no question of the careful preliminary preparation. Certainly this occurred in nitrous oxide and oxygen more than with nitrous oxide and air, or with gas alone. He also found that, as a rule, the patients did not recover their senses quite in the same way as they did after gas, or gas and air; they were more "muddled," if he might use the expression. To some people this was very trying. Of course, these were minor points; but in discussing a new method, or a new mixture, one must look all round the question

from either side. In the next place, he (Dr. Dudley Buxton) was not quite sure whether the method which Mr. Bellamy Gardner employed was the best. He thought that before long they would learn other and better methods of giving gas and oxygen. With regard to the employment of the sphygmograph to record the arterial tension [Mr. Gardner had stated his experiments with this instrument were unsatisfactory], he was a little inclined to think that steady practice would enable one to get satisfactory results with the instrument. Some years ago he worked with the sphygmograph in connection with his researches upon the physiological action of nitrous oxide, and, although he found some difficulty at first, as time went on he learnt how to allow for the rigidity of the tendons, &c., and so to obtain a reliable result; and Dr. George Oliver, as the Society was well aware, in employing his arteriometer, was able to arrive at very satisfactory results. He thought they might quite discount what was said by Mr. Hill with regard to the swelling of the veins; they could eliminate any question of venous engorgement with the arteriometer, when once accustomed to its use. All such mechanisms required great experience and constant employment to get good results. Another practical objection which he had found in using gas and oxygen was referred to by Mr. Gardner, namely, posture. One found that the modern surgeon was so much of an autocrat that he did not allow the anæsthetist to have his patient absolutely rigidly fixed in one position during the whole of the time, at a critical moment he wanted to have the patient moved, and such movement interfered very considerably with the carrying out of the anæsthesia. It had been demonstrated by not only Mr. Gardner, but by others also, that the anæsthetic was a very valuable mixture in its own place. The valuable work done on the Continent, which really brought about the use of oxygen with nitrous oxide, ought not to be lost sight of. The only danger was that it should be elevated, as he feared it was, not by professional men, but by the public, into a position of absolute safety, absolute pleasantness, in fact, into the position of an anæsthetic panacea. He had been gravely told by a medical man that a person who had nitrous oxide and oxygen was kept under for three-quarters of an hour, after taking the mixture, and other ridiculous statements of the sort. There must, he feared, be some swing-back of the pendulum; indeed, they had heard that evening, of some cases which had rather shown them that the pendulum was a little inclined to swing back already. It was a matter of extreme regret that any valuable method, which had been shown up to the hilt to be of the greatest benefit when fittingly used, should be employed on all occasions, and give rise to cases which would bring it into disrepute. For that reason he thought they would agree with Dr Silk and Mr. Crouch in their wise remark that it was better to mark time for the present, and see how this matter was going to turn out. One must recognise that it had an immense possibility before it, and they were beginning to learn that it *might*—he would not say more than that—have some possibility of evil. It was extremely interesting to hear from Mr. Crouch that dilatation of the heart did take place under nitrous oxide and oxygen. Looking at the matter from the point of view of physiology, one would recognise that the absence of cyanosis would in no way help them to say that the heart was not dilated. There might be a dilated right ventricle, and yet there might be no cyanosis. Therefore they might have to re-arrange their ideas, and adopt other safeguards than simply watching the colour of the patient.

Operative Difficulties of Symphysiotomy.

—A recent Paris thesis (M. Rubinrot) observes that the worst enemies of symphysiotomy are those who preach its simplicity without mentioning the accidents that may occur. Among the difficulties that may be encountered in incising the soft parts are dilated, possibly inflamed para-vulvar veins, nodules of fat, and cicatricial tissue from previous operations. It is also sometimes difficult to locate the articulation, owing to ossification, obliquity or deformity of the interline. The sacro-iliac articulations may prevent the separation of the divided bones by commencing ossification of atrophy. Then there is the possibility of hæmorrhage, generally from the plexus of Santorini, but sometimes of arterial origin. Prolapsus of the cord occasionally occurs, also lacerations of the uterus, vagina, and vulva, owing to the lack of support of the bony frame which has been divided. The urethra may also be involved. Closing the breach may also be rendered difficult by hernia of the bladder between the pubes.— *Presse Méd.*, May 10; *Journ. Amer. Med. Assoc.*

CONTENTS.

Specially reported for the Clinical Journal. Revised by the Author.

NOTICE.

METHODS OF EXPOSING THE PELVIS OF THE KIDNEY AND THE URETER FOR SURGICAL TREATMENT.

By HENRY MORRIS,

Senior Surgeon to the Middlesex Hospital.

IN the course of every operation on the kidney, excepting for ordinary movable kidney without obstruction, the ureter ought to be tested with a flexible sound—by passing it through the cavity of the kidney when this has been opened. along the convex border of the organ, or through a small incision made expressly in the back of the renal pelvis. Occasionally the renal pelvis, or the upper end of the ureter, has to be exposed when no operation is contemplated upon the renal parenchyma,—as, for instance, in searching for the exact seat of an obstruction in the ureter, to assist in the repair of a ureteral fistula, or to apply a temporary ligature with the view of ascertaining with which kidney a uretero-vaginal or uretero-uterine fistula communicates.

With the recent advances in the surgery of the ureter, many occasions arise when it is necessary to expose the ureter in various parts of its course other than near the renal pelvis, with the view to ureterotomy, resection of the ureter, secondary ureterectomy (i. e. where the kidney has been previously taken away), or for operations for the cure of ureteral fistulæ. Thus it happens that the ureter may have to be examined under very different circumstances, viz. (1) when it is not known which of the two ureters is at fault; (2) when it is known which ureter, but not the exact part of it which is involved; and (3) when it is known which ureter and what part of it requires to be operated upon.

It follows that in many cases, before the ureter is actually operated upon, one or both of them must be examined; and therefore the first question to decide is, "How can the ureter best

be reached for the purpose of being examined?" and the second question is, " Ought the operation to be performed through the same route as the examination is made, or by another?" There are two chief ways of reaching any part of the ureter, namely, the transperitoneal and the extra-peritoneal, each of which has certain advantages. For reaching the pelvic part of the ureter there are several varieties of the extra-peritoneal method. Each of these will now be described in some detail.

The Transperitoneal Method.

When the surgeon is uncertain not only as to the part of the ureter, but as to which ureter is affected, there is good reason for performing cœliotomy in the median line and examining across the peritoneal cavity. When it is a question not as to which ureter, but as to what part of the ureter is involved, the transperitoneal method through an incision along the semi-lunar line of the affected side, or through a curvilinear incision partly along this line but curved inwards at its lower end towards the middle of Poupart's ligament, is to be preferred, as being more directly over the line of the ureter than the median operation. But, as in the case of the kidney and the renal pelvis, so still more in that of the ureter, the examination by the transperitoneal route can only be imperfect and incomplete. There are anatomical conditions which make it so. In the first place, the ureter by its small volume and want of resistance does not present, as the kidney does, a solid mass which can be seen and felt through the peritoneum covering it. There are parts of the abdominal section of the ureter which are completely hidden by the viscera. On the right side this is the case almost throughout its course; first the duodenum, then, but only when distended, the ascending colon and the cæcum are in front of it. On the left side the sigmoid flexure overlaps it in front. In the pelvic section the sigmoid flexure also falls in front of the left ureter, and prevents the fingers coming into contact with the duct, unless the gut is drawn well to the right. In the male, except for the sigmoid flexure on the left side, nothing lies in front of the pelvic part of the ureter; but in the female, the ovaries, Fallopian

tubes, and the broad ligaments intervene and cover it.

In addition to the above anatomical difficulties, there may be the obstacles, often considerable, of great intestinal distension and a superabundance of subperitoneal fat.

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* 'Arch. gén. de Méd.,' janvier, 1894, pp. 12, 13.

be reached for the purpose of being examined?" and the second question is, " Ought the operation to be performed through the same route as the examination is made, or by another?" There are two chief ways of reaching any part of the ureter, namely, the transperitoneal and the extra-peritoneal, each of which has certain advantages. For reaching the pelvic part of the ureter there are several varieties of the extra-peritoneal method. Each of these will now be described in some detail.

The Transperitoneal Method.

When the surgeon is uncertain not only as to the part of the ureter, but as to which ureter is affected, there is good reason for performing cœliotomy in the median line and examining across the peritoneal cavity. When it is a question not as to which ureter, but as to what part of the ureter is involved, the transperitoneal method through an incision along the semi-lunar line of the affected side, or through a curvilinear incision partly along this line but curved inwards at its lower end towards the middle of Poupart's ligament, is to be preferred, as being more directly over the line of the ureter than the median operation. But, as in the case of the kidney and the renal pelvis, so still more in that of the ureter, the examination by the transperitoneal route can only be imperfect and incomplete. There are anatomical conditions which make it so. In the first place, the ureter by its small volume and want of resistance does not present, as the kidney does, a solid mass which can be seen and felt through the peritoneum covering it. There are parts of the abdominal section of the ureter which are completely hidden by the viscera. On the right side this is the case almost throughout its course; first the duodenum, then, but only when distended, the ascending colon and the cæcum are in front of it. On the left side the sigmoid flexure overlaps it in front. In the pelvic section the sigmoid flexure also falls in front of the left ureter, and prevents the fingers coming into contact with the duct, unless the gut is drawn well to the right. In the male, except for the sigmoid flexure on the left side, nothing lies in front of the pelvic part of the ureter; but in the female, the ovaries, Fallopian

tubes, and the broad ligaments intervene and cover it.

In addition to the above anatomical difficulties, there may be the obstacles, often considerable, of great intestinal distension and a superabundance of subperitoneal fat.

Mode of search.—In searching for the ureter, with the hand in the abdomen, we should in the first place seek for the kidney, feel the renal pelvis, and then when the colon is drawn as much as possible over towards the opposite side, pass the finger-tips downwards on the front of the Psoas muscle, along the usual course of the ureter as far as the point at which it crosses the bifurcation of the common iliac artery, or the first quarter of an inch of the external iliac vessel. If the examination concerns only the pelvic section of the ureter the search may commence at the point where it crosses the iliac vessels. From this point onwards to its termination in the bladder wall a knowledge of the normal direction of the ureter is our only guide. In the male pelvis this course is easily followed by the fingers of the surgeon, as nothing crosses or lies in front of the ureter except the sigmoid flexure, which can be easily pulled aside, and the vas deferens which gets to its inner side near the bladder. In the female, the portion of the ureter which lies in the base of the broad ligament cannot be felt from the peritoneal cavity without opening the broad ligament and separating the anterior from the posterior layer, and passing the fingers deep down to the pelvic floor, where the ureter lies below the uterine vessels.

The examination of the ureter will be rendered easier if the tube is distended, or if it is made hard and prominent at some point by the pressure of a calculus; or rigid by a stricture, stenosis, or calcification of its walls. In one respect the transperitoneal examination of the ureter is less uncertain than that of the kidney, for if a calculus is present it can be felt on any aspect of the tube, and does not need a puncture or an incision to reveal it, as is so often the case with small calculi in the kidney. Otherwise the difficulties in finding and tracing the ureter may be very considerable. Even when greatly enlarged the ureter has not always been recognised, but has been mistaken for the bowel; and in further illustration of the difficulties in detecting the ureter by the transperitoneal method, it may be men-

tioned that a chain of lymphatic glands in the line of the ureter was for a moment thought by M. Poncet to be the ureter irregularly dilated; and M. Chaput,* in the course of an operation for grafting the ureter into the colon, first mistook the ureter for the iliac vein, and then opened a vein which he mistook for the ureter.

It may be needful, in order to examine, or even to find the ureter, to divide the peritoneum at the back of the abdomen. In doing so it should be cut at some little distance to the outer side of the line of the ureter, and should then be raised towards the median line. By this means blood-vessels are avoided, and a flap of the serous membrane is made, which can be afterwards readjusted and sutured in place.

When the peritoneum is thus raised the ureter must be sought for, not upon the surface of the tissues exposed, but upon the posterior or detached face of the serous membrane. It should be remembered that the ureter is closely adherent to the peritoneum, and separates with it when that membrane is raised, as M. Gigon specially pointed out in 1856 ('L'Union médicale,' February, 1856). In spite of these anatomical and clinical drawbacks, the transperitoneal method has its advantages when nothing is known as to the side or situation of the ureteral obstruction. But when by means of it the cause and seat of the obstruction has been found, we must proceed to ureterotomy (or resection) by an extra-peritoneal route.

The Extra-peritoneal Method.

The ureter in its whole length can be explored without opening the peritoneum. For this purpose an incision should be made through the abdominal parietes down to the peritoneum. The peritoneum should be raised and drawn towards the median line with the subjacent intestines, and the ureter sought for and traced on the detached surface of the serous membrane.

The position of the patient.—At first, during the exploration of the lumbar portion of the ureter, the patient should be lying on the opposite side with his abdomen turned somewhat towards the table; afterwards, during the exploration of the pelvic portion of the tube, the patient should be rolled over so that he is still on his opposite side,

but with his back inclined to the table. A cushion is not required under the flank in any part of this operation; it tends to prevent the viscera falling forwards during the first part, and is needless in the second part.

The line of incision.—The incision commences in the lumbar region, a little below the twelfth rib, at the outer edge of the sacro-lumbar mass of muscles, takes a very obliquely transverse course forwards in front and an inch to the inner side of the anterior superior spine of the ilium, and is thence continued parallel to Poupart's ligament, and about one inch above it, as far as its centre. If during the course of the exploration it is found necessary to obtain more room the incision should be prolonged even as far as the external abdominal ring. This should be called the *lumbo-ilio-inguinal* incision.

The structures divided.—The operation should commence at the loin, and the incision should be at once prolonged forwards to the front of the anterior superior iliac spine, and afterwards extended by degrees as required. The skin, superficial fascia, and fat having been divided, the border of the latissimus dorsi and the external oblique muscle are exposed and divided to the full extent of the superficial incision. Then the internal oblique muscle and at the back of the wound the fascia lumborum are exposed and similarly divided to the full extent of the superficial incision. The last dorsal nerve and the subcostal artery and accompanying vein run along the lower border of the last rib, and usually escape being divided; but not unfrequently they pierce the lumbar fascia and take a lower course, and then they may cross the line of incision. If so, they are best divided, the artery being ligatured, and an inch or more of the nerve excised. If the last dorsal nerve pierces the muscular fibres of the transversalis after keeping along the lower edge of the last rib instead of the fascia lumborum, it will escape; but the lateral cutaneous branch of the last dorsal nerve, which pierces the external and internal oblique muscles and takes a downward course over the crest of the ilium, is necessarily divided. The trunk of the ilio-hypogastric nerve is usually below the line of incision, and is not seen; its hypogastric branch is lying parallel to the incision in front of the iliac spine and below it, and is not divided unless the incision is carried as far forwards as the

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* 'Arch. gén. de Méd.,' janvier, 1894, pp. 12, 13.

external abdominal ring, where the nerve may be cut near its termination.

The fascia lumborum, and at the front of the wound some of the muscular fibres of the transversalis muscle, are divided to the full extent of the division of the more superficial layers. This should be done very carefully, because in thin subjects the peritoneum is closely beneath the transversalis muscle and very adherent to the intervening fascia. The outer edge of the quadratus lumborum is exposed, and if the muscle is

manner ordinarily carried out in operations on the kidney. If the kidney need not be explored, it is sufficient to clear the surrounding fat from off the posterior surface of the renal pelvis by the forefinger nail, so as to bring it fairly into view and by traction to put the ureter into relief.

If nephrectomy has not been previously performed, and if the perinephric tissue is not too much altered by inflammation, the renal pelvis, whether the kidney is to be explored or not, is the best starting-point for the systematic examination
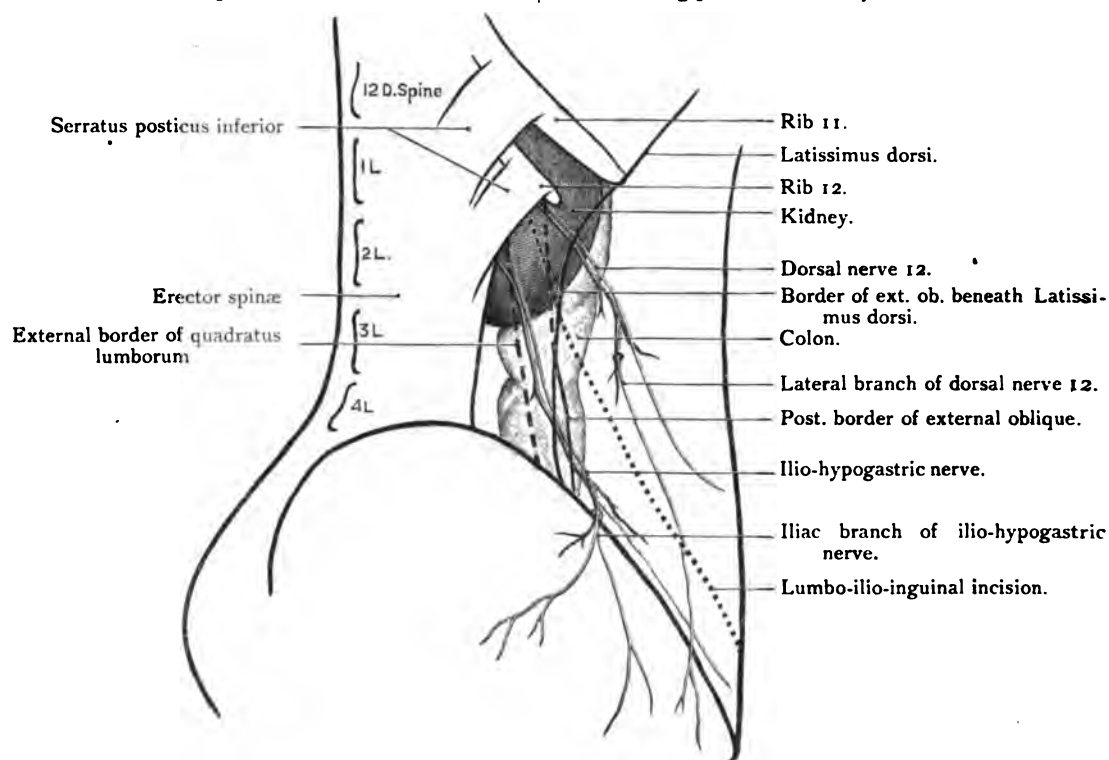
Dissection of loin showing relation of nerves to line of incision.

From dissections and photographs by Dr. Robinson, Chief of the Anatomical Department of the Middlesex Hospital.

broad it should be divided as far back as the limit of the skin incision.

The transversalis fascia will be exposed, and should be freely divided; this done, the perinephric fat will bulge into the wound at the back, and the subperitoneal fat will be seen further forwards.

The search for the ureter.—The edges of the wound must be well retracted, and if the kidney has not been removed by a previous operation, and if it requires to be examined, it must be sought for now. This should be done in the

of the ureter. Following the inner border of the kidney upwards to the hilum, the finger reaches the angle between the kidney proper and the infundibulum, and if the tip of the forefinger be passed in front of this the renal pelvis can be examined between the finger and thumb for any calculus or thickening about it; and further, traction can be made upon the ureter by looping up the renal pelvis into the wound.

This done, the peritoneum should be detached gently with the finger-tips until the ureter is raised as far as the examination requires. With a thin

flat sponge introduced into the wound, the serous membrane and subjacent intestines should be drawn towards the middle line by the fingers of an assistant. Neither the sponge nor the assistant's fingers should be passed so far into the wound as to cover the peritoneum along the normal line of the ureter. If now the ureter can be brought into relief by pulling upon the renal pelvis, or if, without this, its outline can be distinguished on the detached face of the serous membrane, a few touches with the point of the scalpel will detach the surrounding cellular tissue and allow of the ureter being exposed. It must then be separated by careful dissection as far as the circumstances of the particular case require.

If it is desired to expose the pelvic section of the ureter, the incision of the abdominal parietes should be extended step by step by gently separating the peritoneum at the anterior extremity of the wound, and then with a probe-ended bistoury, guided upon the left forefinger, cutting the layers of fascia and muscles and integuments from within outwards; or blunt-ended scissors may be used for the purpose. If the kidney has been removed, or perinephritis has occurred and the tissues around the kidney are so condensed and adherent that the renal pelvis and adjacent ureter cannot be cleared, it will be necessary to commence the search for the ureter lower down, at the part where it crosses the iliac vessels.

The ureter will be found upon the outer surface of the serous membrane, looking like a whitish or whitish-yellow flattened tape. I have found it having this appearance, even when enlarged and so stuffed with tuberculous contents as to stand out like a rigid rod after being dissected away from its cellular tissue investment. In the male the ureter can be exposed and examined in this way without difficulty down to the bladder, and without the division of any blood-vessels or nerves from one end to the other. In the female the ureter is not so easy of access because of the broad ligament, the folds of which must be opened up; and as these folds, especially the posterior, descend very low into the pelvis, there must be a considerable detachment of peritoneum. The peritoneum is, moveover, very thin and adherent to the structures in the pelvis, and therefore is easily torn. In the base of the broad ligament the ureter is surrounded by tough

fibrous tissue, in which a plexus of minute vessels derived from the uterine and vesical arteries is contained.

In the male the spermatic vessels diverge from the ureter as the latter enters the true pelvis. In the female the ovarian vessels run in front of and close to the ureter for the first inch or two below the pelvic brim, and are sometimes so united with it by adhesions that it is difficult to isolate or even to recognise the ureter. The ovary itself is occasionally united with the ureter by adhesions of bands of false membrane. If the ureter has to be traced as far as the bladder, the uterine vessels which are in intimate relation with the ureter, the artery in front, and the veins behind it and crossing over it to reach its inner side, are in the way, and must be divided and ligatured.

Several variations from the plan here described have been suggested or adopted, both as to the line of incision and as to the guides to be followed in seeking for the ureter.

As to the variations in the incision, they affect almost entirely the lumbar portion, and for the most part are the same as are employed in performing operations on the kidney. The vas deferens (Regnier, ' Bull. et Mém. de la Soc. de Chirurgie,' fevrier 15, 1893, p. 107), the spermatic vessels (Le Dentu); the Psoas muscle and transverse processes and bodies of the lumbar vertebræ (Trekaki and Cabot) have been recommended as guides to the ureter; but they are all misleading, and surrounded with dangers which do not attach themselves to the method above described. It is unnecessary to do more than allude to them.

Other Extra-peritoneal Routes to the Pelvic Portion of the Ureter.

Several methods have been proposed for reaching the terminal portion of the ureter, both in the male and female, without opening the peritoneal cavity. *In the male* five methods have been suggested, if not tried, viz. the rectal, hypogastric, sacral, perineal, and iliac or ilio-inguinal. In woman there are two chief routes, viz. the vesical and the vaginal.

The rectal route.— Ceci (' La Riforma Medicale, September 5th, 1887) removed seven calculi from the lower end of the ureter by an incision through the rectum.

The hypogastric route.—The hypogastric route consists in opening the bladder above the pubes and examining the vesical orifice, then palpating and catheterising the intermural section of the duct. Albarran adopted this plan by making a transverse incision, and passed a retention catheter into the ureter. Glantenay states that in several instances at the Necker Hospital the longitudinal incision has been found to give ample room for exposing the ureteral orifices from above the pubes. Tuffier adopted this route in two cases for removal of stones.

The sacral route.—Delbet recommended the method by means of an L-shaped incision, after the manner of Kraske for excision of cancer of the rectum; the soft parts are divided, the rectum laid bare, and the peritoneum reached, on the under or outer aspect of which the ureter is adherent.

Delbet's (Soc. Anatomie, 1892) directions for the sacral operation may be summarised as follows (Glantenay).

1. The patient should be placed upon his sound side, so that the rectum may fall away from the wound.

2. The incision should be L-shaped, with the long arm vertical, along the border of the coccyx, and the short falling upon the superior extremity of the first, being almost parallel to the fibres of the gluteus maximus.

3. Cut the insertion of this muscle and the sacro-sciatic ligaments and some fibres of the pyriformis.

4. Lay bare the lateral face of the rectum with forceps and a director. The ureter is always to be found adherent to the detached peritoneum. The ureter can be followed downwards to the bladder and upwards for 7 or 8 cm. from its termination. This description applies specially to man; in woman it is more difficult, because of the broad ligament.

Wölfler, for the removal of calculi from the inferior extremity of the ureter, advised a pararectal incision 10 cm. in length at 2 cm. from the median line. Regnier tried Wölfler's incision for ureterectomy of the lower end of the duct, but failed to find it ('Bull. et Mémoires de la Soc. de Chirurgie,' xix, 1893, p. 106).

Cabot and Fenger recommend resection of the sacrum for the purpose of gaining more room.

Cabot thinks a modification of the incision of Kraske for excision of the rectum would open up the way to this part of the ureter (vesical end and near it); and Glantenay, from his dissections, confirms this.

Cabot considers ('Boston Med. and Surg. Journ.,' 1890) an incision the length of the sacrum stopping just below the coccyx with division of the sacro-iliac ligaments, the removal of the coccyx and of the inferior portion of the side of the sacrum, opens the pelvic cavity in a satisfactory way, and gives easy access to the last three or four inches of the ureter. The only difficulty is the dissection with the view of finding the ureter, which is flattened and not easily recognised. The converging lines of the ureters as they cross the pelvis correspond, Cabot points out, almost exactly to the lateral border of the sacrum, and this relation may serve a little to determine their situation when one approaches them from behind. One can recognise and avoid wounding the rectum by passing a bougie into it and making it press outwards the side of the gut. This (sacro-coccygeal method) operation is unnecessarily severe, as Delbet's method gives sufficient room. Glantenay says he has practised both on the cadaver many times, and finds Cabot's an useless complication, and should be condemned definitely, having no advantages over the iliac route.

Cabot is of opinion that the last three or four inches of the ureter "practically cannot be reached by an extra-peritoneal route through an incision on the front of the abdomen;" but personal experience tells me that this is a mistake if he means it to apply to the male as well as to the female.

Pre-rectal or perineal route.—To remove a stone impacted in the lower end of the ureter close to the back of the bladder in the male, an incision may be made similar to that which I have for many years past demonstrated on the subject as suitable for certain cases of prostatectomy, and which Ullmann of Vienna has successfully employed for excision of the vesicula seminalis. It consists of a crescentic incision, with the convexity backwards, about ¾ of an inch in front of the anus from one tuber ischii to the other, and if more room is needed joining with this incision another forwards along the raphe

of the perineum. Then the rectum should be dissected from the prostate, this step being facilitated by a sound in the bladder; the fibres of the levator ani have to be divided so as to expose the prostate. Continuing the separation of the tissues (which can now be done without the knife) upwards, the posterior extremity of the vesicula seminalis will be reached, and with it the ureter where it is passing between the seminal vesicula and the posterior wall of the bladder. Whilst separating the rectum from the prostate and vesicula seminalis care must be taken with the left index finger in the rectum, and the right index finger in the wound feeling from time to time for the sound in the urethra, to avoid wounding either the bowel or the urethra.

In 1884 I recommended that a calculus impacted at the vesical orifice of the ureter should be removed by opening the bladder through the perineum (perineal boutonnière) in the male, or by dilating the urethra of the female, and, if necessary, incising the orifice of the ureter by a gum-lancet shaped knife in a long handle, passed along the index finger through the perineal opening or the female urethra as the case may be (' Amer. Journ. Med. Sciences,' p. 468, 1884; also in ' Surgical Diseases of the Kidneys,' 1885, p. 538). I did not, however, dream of suggesting this vesical method for calculi which had not actually reached the extremity of the ureter, and could be there felt either by rectal examination or by sounding the bladder. So placed, however, a stone could be extracted through the bladder with fair certainty of not cutting the muscular and fibro-cellular coats of the bladder: the peritoneum should be safe, because the intervesical portion of the ureter passes between the mucous membrane and the muscular coat of the bladder.

The ilio-inguinal.—In the male the ilio-inguinal is preferable to all the other methods. It is the same as the method previously described for tracing the ureter in its whole length, only when the pelvic portion alone is sought the incision is limited to the anterior part of the abdomen, commencing above and to the inner side of the anterior superior iliac spine. Clinical experience has shown the suitability of this incision in the living subject.

Twynam (' Trans. Chir. Soc.' 1890), instead of following this curvilinear line, made an incision as for tying the common iliac artery. Regnier (' Bull. et Mém. de la Soc. de Clin.,' Feb., 1893, p. 107) cut directly through the anterior wall of the inguinal canal, intending thence to follow the vas deferens as a guide to the ureter. This, however, failed, and he had after all to resort to the point of crossing of the iliac vessels and the ureter as a starting-point for tracing the duct into the pelvis.

In the female the rectal and perineal and the ilio-inguinal methods are out of the question.

Glantenay says the incontestable reasons which make the iliac route inferior in woman are the much greater difficulty in separating the peritoneum in consequence of the broad ligament; the dangers of serious hæmorrhages; the difficulty in applying hæmostasis at the bottom of the funnel-shaped recess; and the persistence of a cavity very disposed to urinous and purulent retention and infiltrations. So that in woman there is something in favour of the sacral over the iliac route in this part of the course. The ureter by the sacral route is more readily discovered if an ureteral catheter is previously passed, and this can be done in the female, whereas it cannot be readily employed in the male. All the difficulties which may arise from the relations of the ureter to the ovarian and uterine vessels, the broad ligament and ovary, are escaped by the sacral route. As the ureter passes across the pelvis in the base of the broad ligament the ureter can be approached from the postero-inferior aspect without separating the folds of the broad ligament, and almost without separating the peritoneum from the pelvic wall. The uterine artery can also be easily avoided in approaching the ureter from behind and below, whilst the ovary and ovarian vessels are high out of the way. Again, if vessels have to be divided the bleeding ends can be easily seen and caught up, and the ligation is unattended by the difficulties of the iliac way.

The *vesical* method would be the simplest and readiest for a stone impacted at the vesical orifice of the ureter. It would be easy after dilating the urethra, and incising if it were necessary the ureteral orifice whilst the calculus was steadied by the finger of the left hand in the vagina, to set free a calculus and remove it through the urethra (see Amer. Journ. Med. Sciences,' Oct., 1884). Nathan Bozemann opened the bladder *through the vagina* with a view of treating suppuration in

the renal pelvis by irrigation along the ureter ('Amer. Journ. of Med. Sciences,' March and May, 1888, p. 255). Others have commended the vesical method by the hypogastric route in preference to that by the vaginal or urethral for operating upon the terminal extremity of the ureter.

The *vaginal method* is adapted only for plastic operation on the last part of the ureter, and for calculi impacted in the vesical and juxta-vesical part. It has the sanction of experience, and has yielded admirable cures for uretero-vaginal fistulæ. It has been adopted by Emmet, by Cabot, and by M. Doyen. M. Doyen, without having previously felt the calculus, made a delibe-rate incision into the vagina, and then detected and excised the stone through a subperitoneal incision in the ureter. Emmet and Cabot in their cases felt the calculus through the vaginal wall before commencing their operations, and therefore took the stone for their guidance in making their incision into the ureter.

Doyen's operation is so far superior to Emmet's and Cabot's that it enables the surgeon to extend his examination to the whole of the juxta-vaginal and broad ligament portion of the ureter, and thus to find and extract a stone situated higher than could be felt by simple vaginal palpa-tion; and by the use of retractors the field of operation in the vagina can be enlarged sufficiently to facilitate the difficult manipu-lations for suturing the urethra. The ureter is to be exposed at the level of the *bas fond* by an incision of the anterior cul-de-sac of the vagina, practised as in vaginal hysterectomy. The neck of the uterus is seized forcibly and dragged downwards and backwards so as to make tense the cul-de-sac, and the mucous membrane of the vagina in front of the uterus to its full width is incised. This done, one separates the bladder as far up as the vesico-uterine cul-de-sac with the finger. If the walls of the ureter are thickened by tuberculous deposit, or by ureteritis, or if dis-tended by calculus or made evident by the ureteral catheter, there is no difficulty in its discovery. Otherwise there is no certainty of finding the ureter. But practically this difficulty does not exist, be-cause before adopting the vaginal method there has ordinarily been found by digital examination *per vaginam* evidence of some distinct lesion of

the tube. An abnormal condition of the ureter felt before beginning the operation is itself the guide to the ureter. The operation is terminated by inserting a strip of iodoform gauze as a drain for the vaginal cul-de-sac.

A comparison of the sacral and vaginal routes shows that the *sacral* conducts directly upon the posterior segment of the pelvic portion of the ureter; the *vaginal* leads to the anterior part. The sacral way permits the examination of the whole of the pelvic part of the ureter; the vaginal route allows of the exploration of the ureter within and in front of the broad ligament, and nearly if not quite up to the brim of the pelvis. The vaginal method gives little room for use of fingers and instruments. The interval be-tween ureters and pelvic wall at the level of the cervix—in the middle of which interval the ureter courses—is only 4 cm., an interval far too narrow, consequently, to permit the manipulation neces-sary to operate upon the ureter as far up as the neighbourhood of the brim of the pelvis.

The vaginal method is the best for calculi situated in the intra-ligamentous and juxta-vaginal portions of the ureter.

Justus's Test for the Diagnosis of Syphilis.
—Cabot and Mertins, writing in the 'Boston Medical and Surgical Journal' of April 6th, confirm this test. It consists essentially of a fall in the hæmoglobin of the blood after an inunction of mercury. In diseases other than syphilis no such fall is observed. Cabot and Mertins found that seven cases of syphilis in the active stage lost 21 per cent. of hæmoglobin after one inunction. That this was not due to errors in technique is shown by the contrast obtained in the control cases. Slight gains and slight losses are recorded by all within the limit of error except two cases. One of these was a case of tertian malaria in which a chill occurred after the inunction. This is sufficient, they think, to account for the loss of 10 per cent. of hæmoglobin. The other was a case of chlorosis; in this a typical positive reac-tion was obtained with a loss of 13 per cent. in hæmoglobin. So far as it goes this case tends to diminish the value of Justus's test. No evidence of syphilis was present.—*Medicine,* June, 1899.

WITH DR. MAGUIRE IN THE OUT-PATIENT DEPARTMENT, ST. MARY'S HOSPITAL.

May 30th, 1899.

GENTLEMEN,—As you have probably noticed, one never knows what cases may come before one in the out-patient department of a hospital. In the wards matters are different, for there, knowing what patients are in hospital, one can prepare the teaching beforehand. To-day I had hoped to bring before you some cases which would be of special interest to you; but, unfortunately, those easiest to demonstrate have not attended. Still, those which are here, and which have been coming to the out-patient department during the last month or so, will serve to illustrate some interesting points in clinical medicine.

Here is a man to whom I wish particularly to call your notice. The only diagnosis which I can make of the case is pseudo-sclerosis. That is the name for a condition which is not generally admitted by neurologists. At the same time this is the third case of the kind which I have seen, and, though the name gives no information as to the pathology of the case, I can find no better one. Whatever the condition be called, it must be recognised. The patient is a cabman, who drove me to a railway station the other day, and I observed that his hands were very shaky. When he saw that I noticed this he hastened to inform me that he had not been drinking. Of course, I saw at once that he was speaking the truth, but the tremor seems to have been a great trouble to him, for he has time after time been accused of drinking to excess. He also says that, as happens to every cabman, sometimes he has been hauled up before the magistrate for loitering, and he tells me that he gets so excited on such occasions, owing to the liability of being mistaken for a drunkard, that he pleads guilty and pays the fine rather than argue the case at all. Alcohol or any other excitant increases his tremor, and therefore he avoids them. I ask him to take this mug in his hand and put it to his mouth, and, as he does so, you will notice that the amplitude of the tremor increases greatly as the act approaches completion,—that is to say, the nearer he gets the cup to his mouth, the greater is the distance over which his hand vibrates. At the same time his head shakes similarly. You will notice that the character of the spasm is much the same as that exhibited, in a less degree, by an alcoholic. If a débauché puts a vessel to his lips, the tremor increases as the vessel nears its goal. This is the characteristic movement which is said to be due to disseminated sclerosis. But this man does not show any other of the classical symptoms of disseminated sclerosis. You will see that he has no nystagmus, and there is no tremor of his tongue. Instead of his knee-jerks being exaggerated, as in disseminated sclerosis, he has lost them. He has a certain stiffness of movement, and he crosses his legs with difficulty, but this is all. I think he does not present any single symptom of disseminated sclerosis except the tremor. The question is, what is the matter with this man? He tells me he has suffered from this condition, more or less, ever since he was a child, and that it has gone on gradually increasing ever since.

I have had two cases of this kind under my care at this hospital. One of these, you will remember, occurred fifteen or eighteen months ago. The patient was a man who presented symptoms very much like those of this patient. I said it could not be a case of organic nervous disease; it imitated disseminated sclerosis, but at the same time it was not typical of the disorder. That patient went one night to a Free Library in the north of London, and on coming away, perfectly sober, was seen to fall down, was picked up unconscious, and died in a short time. Afterwards the coroner made an order for a post-mortem examination, and I sent one of our porters to attend the examination, so that I might have an account of the exact condition of the brain and spinal cord. Death was due to cerebral hæmorrhage, quite unconnected with the symptoms described, but caused by arterio-sclerosis, which we had diagnosed. Since that time we have had the brain and spinal cord examined by the modern methods, and yet, with the exception of the lesion which caused death, there was nothing found wrong, no sclerosis whatever, and therefore we must call the case pseudo-sclerosis.

The other case which I have seen here was one which I published some thirteen years ago in

'Brain.' A man came to me here, in the out-patient department, who had been starved, and showed symptoms very much like those presented by the patient here to-day. I took him into the hospital, and after he had been well fed for a time all the symptoms disappeared. About eight months after that, he was admitted to the Queen Square Hospital, under Dr. Ormerod, showing again the same symptoms. Dr. Ormerod told me he could not call it anything but pseudo-sclerosis. Once more the man got well. He could not have had any organic lesions, for they could not have disappeared in the time. The point I emphasise is that this patient before you has no organic lesion, and his symptoms are not due to such a lesion. It is possible that when extremely irregular actions, such as this man has, have existed for a long time, you may find secondary disorder of the nervous system, even organic disorder, after death, produced by those irregular actions, but the organic lesions are not the cause of the irregular actions. Witness the one case in which I made a post-mortem examination, where there could not be found any organic disease whatever, and also a few other cases which have been recorded. I would especially insist that we are often in too great a hurry to name a condition, according to any organic lesion which may have been found at some time or other in past and similar cases. I am certain that many of the nervous diseases which we come across are functional, at any rate in the first instance. As I have said, the disordered actions which they cause may lead ultimately to some organic disease which may not be curable; but frequently, I think, the trouble is in the first instance functional and curable. Of course I do not anticipate for a moment that all this man's symptoms will disappear, but we will see what we can do for him. I think this case can be explained by a failure of the central and higher nervous mechanism, the part which controls, thus leaving the lower functions to act according to their own sweet will, and to run riot. After influenza one sees sometimes cases presenting a condition very like this, but, perhaps, not so characteristic. Such a condition gets better under good feeding and the administration of phosphorus, and so I propose to treat this patient.

Here is a patient, aged 65, sent up from the ear department by Dr. Hill for an opinion, and who comes *apropos*. He complains of singing in the ear, and Dr. Hill has removed some wax from the external meatus. The patient also says he hears voices calling to him when no one is present, but I am afraid his mental condition is such as to prevent us placing any reliance on this symptom. His son, who brings him, tells that two months ago he suffered from influenza, previous to that time having been in perfect health. Since then he has lost his memory, has been at times worrying about the loss of his business, and yet, as he is now, is quite cheerful and even merry in recounting his case. He is very shaky, though not presenting the peculiar shakiness I have just mentioned. His head is steady, and the movements, both of arms and legs, are jerky, and in fact he seems to steady himself for movement, as if time were required to get impulse together, and then he goes off in a hurry. His speech is peculiar, and, though not perfectly characteristic, is nevertheless reminiscent of that of general paralysis of the insane. His lingual muscles are most affected—he bungles sadly over saying "The Royal Irish Horse Artillery,"—while his labial muscles are extremely shaky—witness his "Peter Piper picked a peck of pickled peppers." His pupils are equal and react to light; his knee-jerks are feeble, but present. In all other respects he appears to be well. Surely this is not general paralysis, developed in less than two months' time! I have seen cases, and shown some to you here, of even more pronounced symptoms of general paralysis, occurring after influenza, from which the patient recovered completely under the administration of phosphorus and good feeding. I propose to treat this patient also in the same way. The pathology of such cases, and also of general paralysis, is—as I have on other occasions told you—essentially the same. In both we have a poisoning of the higher nervous system—in general paralysis, from intense syphilis, recovery from which is impossible—in such cases as you see here, from influenza, from which recovery is possible. We will wait for the result.

Some patients here, suffering from hemiplegia, illustrate certain special points which are not mentioned in the books, and which, I think, are of some importance, so let me call your attention to them. For instance, there is here a case presenting all the ordinary characters of recent hemiplegia.

Of course, when a patient suffers from cerebral hæmorrhage, there is a certain amount of shock; every function is gone for the time, and, after an interval, a certain amount of recovery takes place, and we get what we may call the normal condition of the hemiplegic. That condition is especially worth noting in cases which are due to cerebral hæmorrhage. You find that the first part to recover is generally the leg. or the face; most certainly the last part to recover is the arm,—that is to say, in what one may call the early stage of hemiplegia, when the first shock is over, the arm is paralysed more than any other part. Now the paralysis of the arm, as to parts, pursues a certain order. In the first place, the fine movements go,—that is to say, the specialised movements. Next the movements of the wrist, those which are the next immediately specialised, disappear. After that the movements of the elbow and shoulder are lost, until of course, if the arm is paralysed completely, you find absolute flaccidity of the limb. But that absolute flaccidity you scarcely ever see, except in the early stage— that is during the period of shock. But when the patient is recovering power there appears a certain amount of movement of the shoulder and of the elbow, then of the wrist, but scarcely any of the specialised movements of the hand, and especially is there no movement of the adductor pollicis, the movement which the monkey is unable to perform, —that is to say, touching the little finger with the thumb. There must be some explanation for all this, and the explanation which is generally taught, I am sure, is the wrong one, although it has no less an authority than that of Charcot.

No one could ever teach me to draw, but I may roughly sketch on this piece of paper a horizontal section of the cerebral hemisphere, and the effects of hæmorrhage upon it, such as you can see in the post-mortem room any day. A hæmorrhage generally begins in the external capsule, from some branch of the lenticulo-striate artery, and works its way in centrifugal layers, pressing the nerve matter to one side. Sometimes it bursts through the island of Reil and reaches the surface through the fissure of Sylvius. Sometimes, again, it smashes up the lenticular nucleus and the internal capsule, and reaches the ventricles—in either case causing almost immediate death. But the parts which are thus destroyed

are really very resistent, and such cases of cerebral hæmorrhage as come to us in the out-patient room are those of less extent, where the hæmorrhage has simply pushed to one side the lenticular nucleus and the internal capsule. In the internal capsule the location of function is known. From before backwards we have fibres from the frontal lobes, going probably to the cerebellum and concerned in control of some kind; next the motor fibres of the face, then of the arm, then of the leg, and lastly, fibres concerned in sensation. Now the common teaching is that the peculiar loss of power of the hemiplegic is due to the picking out of individual fibres in the internal capsule, the arm being specially affected. But the sketch I have given you, rough as it is, shows that it is extremely improbable that a coarse lesion, such as we are dealing with, should pick out individual fibres in the internal capsule, which it never touches. If we were dealing with the cortex, where the fibres are more separate, things might be different; but here, in the interior, it would require a needle-point to cause such symptoms as you see in this patient. Look for yourselves in the next post-mortem on such a case, and you will see the force of this argument. I would recommend you to think that we have here a mere pressure and general interference with the whole of the fibres, and that the localisation of the symptoms is due to some other cause,—in fact, follows the law of involution, which I have formerly explained to you, by which the special fails before the general, and the general before the automatic —as the result of a general and equal loss of vitality. For instance, the normal action of the leg is almost entirely automatic. In walking you do not exercise your mind as to what muscles you will use in moving your leg. You think you will walk, and somehow your leg moves, no doubt under the influence of subordinate centres. So it is to a great extent with the face. As I am talking I do not think of what muscles of my face I am moving, or what muscles of the face I should like to move. Of course, if I wish, I can pull my face to one side, but as a rule one does not wish to do so. The movements of the face are governed by subordinate centres, which are not immediately under the control of the higher nervous apparatus. But things are very different with the arm. There is only one movement of the arm which is auto-

matic, and that is the swing in walking, for the purpose of balancing the body; as one walks one unconsciously swings the arm in one direction, while the leg of the opposite side is moving in the opposite direction. Almost every movement of the arm, then, is special, and the most special is the touching of the little finger with the thumb, which, as I have said, is not possible with the monkey. That corresponds with the law of evolution, and by the law of involution, to which I have referred, the special fails before the general, and the general fails before the automatic. The first function to be lost is that which requires most vitality for its production. If you apply that law, you find the motions of the arm ought to be lost before those of the leg and face. Or, to put it differently, the motions of the face and leg will be retained long after those of the arm are lost. To my mind, that disposes of the theory about the action of the cerebral hæmorrhage pressing to one side the internal capsule and picking out individual fibres. I do not think the individual fibres are ever picked out in this way. But here is another point, which, even in this recent case, is shown fairly well if you will just watch the patient carefully. She has almost recovered her paralysis, but I want you to notice the position of her hands. Her right hand assumes a claw-like aspect, the thumb being drawn out from the wrist, and the fingers separated. She has, you will notice, some tendency to extension of the first phalanx, and flexion of the other two, in all the fingers, with extension of the metacarpal bone and flexion of the two phalanges of the thumb. That is the opposite of the action of the interossei and lumbricales muscles or their congeners. They flex the first phalanx and extend the two terminal phalanges. As a matter of fact, although she has almost entirely recovered the power of her arm, she is still suffering a little from the imperfect action of these very specialised muscles, and they are overcome by the others. This illustrates the law that the automatic recovers first, then the general, and lastly, the special. Of course, voluntarily she can get action of her interossei, though slowly and imperfectly.

I want also to call your attention to a case here to-day, where a man is recovering from hemiplegia, and, having recovered from the hemiplegia proper, is suffering from what is known as secon-dary contracture. That is to say, his muscles are getting stiff, from what we believe is a secondary degeneration of the spinal cord. Curiously enough, that man also has a claw-hand, an exaggerated condition of that which this woman shows. He has stiffness of all the muscles of his arm except those of the hand. If you examine the muscles of the forearm you find them quite rigid, whereas those between the metacarpal bones are quite soft, showing that there is not the same condition in them as in the muscles higher up. The explanation of that is curious also, and I believe it must be stated in the same way—that it is due to an imperfect return of the muscular power; at any rate, I do not see what other explanation will fit in with the condition. I will show you presently a case to illustrate this further. I believe the return of power follows the same law as I have already referred to. In this man there is stiffness of the movements above the shoulder, but he can move the shoulder; there is a stiffness of the elbow and wrist, but he can move them; but there is no stiffness of the interossei muscles, and he cannot move them, the defect giving rise to a claw-hand.

In this next case we have a man with so-called infantile hemiplegia and contracture. It came on suddenly when he was six years of age, and gave rise to hemiplegia at the time. That is the general history of such cases. Some time in early childhood there is a cerebral attack, and cases have been recorded in which, on post-mortem examination, cerebral hæmorrhage has been found. But the condition left afterwards is that known as porencephalon, an absence of the motor convolutions on the opposite side to the hemiplegia. Anyhow, the result always is hemiplegia, with a considerable amount of contracture. Again, as in this man's case, it is known that about the age of puberty epilepsy develops in these cases, but contracture is always a well-marked feature of them. In the man before you, you notice how stiff his muscles are, owing to this slow return of imperfect power. You notice also the upper arm drawn towards the side, the forearm bent across the body, and the wrist bent also. Here again you will notice that the interossei are not affected anything like so much by contracture as are the other muscles. You see he has marked flexure of the second and third

phalanges, and a tendency to extension of the first phalanges. That means that the interossei are not acting, and are being overcome by their fellows, the reason being that the interossei are extremely specialised muscles, which require a great deal of vitality for their action, and therefore they did not recover as well or as quickly as the others. Another point is that probably, in this man's case, they never attained their full power before the paralysis began, for he was only seven years of age when the contracture set in.

Here is the case of a man, aged 55, with hemiplegia, and he illustrates some other points of secondary contracture, which might puzzle you. There is paralysis on the right side, with paralysis of the face muscles, and you will see the forehead muscles are wrinkled on the right side more than on the left. Though he has recovered power in his hands, he has some symptoms of contracture left. The knee-jerk is exaggerated on the paralysed side. That, again, is a feature of descending degeneration, as we call it. The right hand moves a little more stiffly than its fellow. There is no appreciable ataxy.

I show you next a case which I saw, for the first time, last week, of lead poisoning, with very marked dropped wrist. I want to point out to you here how, again, the interossei muscles are the more paralysed. This man has paralysis of the whole of the extensors of the wrist, but the position his hand assumes illustrates very well the position produced by paralysis, which affects chiefly the interossei. He has practically extension in his first phalanx, and distinct flexion of his second and third, and especially in the little finger; whereas, if the interossei were acting properly, there ought to be flexion of the first phalanx, and extension of the second and third. He has been treated in the electrical department, and I think he is distinctly better already. You will find his supinator longus is still acting strongly, although his other extensor muscles are paralysed.

In the case of the next patient I am at an absolute loss for a diagnosis; I do not know what to call his disease. He was sent to the hospital because he had had an attack of what one must call intermittent fever, whether malarial or not I cannot say. He asks to-day if he might have caught it from another man, who had ague. The contagiousness of malaria is a point which will be

of interest to the profession one of these days. It was brought before medical men last year by one of our old pupils, Dr. Leonard Rogers, of the Indian Medical Service. He showed that the Assam fever was distinctly contagious, although it was true malaria. Of course, contagiousness, such as this man asks about, is absolutely impossible. Before he was admitted here he had a temperature of 105°, but when actually admitted it was below normal. Whilst he has been in the hospital his temperature has been very irregular, and the only regularity it has shown is in being higher in the evening than in the morning. It is said that he was distinctly jaundiced at one time, but I have not seen it myself until to-day. The question arose as to whether there was any malaria in the case. He was born in Lincolnshire. Again, the question arose whether he had gall-stones. But he has never had pain, and I can find no enlargement of the liver or spleen, and the only point which I noticed about him, when he came in, was that he had brown discoloration of the skin. Addison's disease was suggested as a possibility, but there was nothing to be found to support that. However, on coming to look at his conjunctivæ, now I find that he is decidedly jaundiced. He has had a rise of temperature for four or five days. There is nothing organic to be found in him; he has no pain. He is said to have had at one time some peritonitis over the right side. The possibilities here are, first, malaria. It may be a case of gall-stones which are not presenting themselves in the ordinary way; and, thirdly, it may be Addison's disease, although this pigmentation which we speak of is so slight that it is scarcely to be noticed. Again, the case might be purely functional, and not due to any parasite,—that is to say, due to a functional or nervous disorder. The latter was my impression when he first came in, but I think that idea must be given up now. On the whole, I am inclined to think it is a case of recurrent peritonitis round the gall-duct, possibly due to a former gastric ulcer.

This next patient shows phthisis of the middle lobe of the right lung. As I have mentioned to you many times here, phthisis which begins in the middle lobe of the right lung is always very intractable, and so it has proved to be in this case. Certainly it does not seem to get much

worse, but neither does it seem to improve very much. I do not know why phthisis of the middle lobe should be so intractable. Again, it is of some importance to define the outlines of phthisis in the right lung, because if it is primarily affecting the middle lobe, or if it is extending to the middle lobe from other parts, you may be sure you are dealing with a late case of the disease. In this case other parts of the lungs do not seem to be affected, or only very slightly.

The next patient, a middle-aged man, is suffering from emphysema and bronchitis. The cause of it in his case is working in vegetable dust. He has worked for many years in a dark place, packing crockery or bottles in straw, where he has had to inhale dust all day. I have repeatedly noticed this as a cause of bronchitis and emphysema at Brompton Hospital. I have had a large colony of patients from Luton and Dunstable, in Bedfordshire, that being, as you know, a great centre of the straw hat industry. Bakers, also, are particularly liable to emphysema and bronchitis, from inhaling the dust of flour. In this neighbourhood one finds many chaff-cutters have the same condition of bronchitis and emphysema. This man has been in the packing line for forty years; in fact, has never done anything else. Of course, there is no rule about so-called asthma in regard to what place will suit such patients best. But, as a rule, bronchitics and emphysematous people are best away from the sea-side; they do better in the interior.

This woman, aged about 50, whom I have just asked to come into the hospital, presents dilatation of the stomach. The patient has been complaining for very many . years of dyspeptic symptoms of various kinds, particularly of flatulence, and I have been treating her with the ordinary dyspeptic remedies for some little time, and especially with the diastase preparations, in the hope of preventing fermentation going on. But there is here something more organic than dyspepsia, for she has a considerable amount of dilatation of the stomach, and another symptom which I have elicited is splashing in the stomach. It is some time since she had food, and I have examined her on other occasions, three or four hours after food, and yet there has been this splashing present. Therefore that cannot be a normal condition. Some years ago I had some

very cute clinical clerks, who used to try how they could catch me. They asserted that they could produce splashing in themselves, and that, therefore, it was quite a normal condition. So I admit it is if you take the subject half an hour after lunch which has consisted of a great deal of liquid, as it did in their cases. If you examine anybody soon after a meal, you will get splashing, but it is then due to a mixture of air and fluid in the stomach, with a certain relaxation of the stomach walls. That must necessarily be the case a short time after food, for air is swallowed with the food—possibly only a small quantity— which expands with the heat and becomes considerable. But that is not fermentation. Where you have a case like this, in which you get splashing two, three, or four hours after a meal, and the stomach enlarged, that means air and fluid, and you may know that such gases as are present in the stomach then are due to fermentation, and not due to the air which is swallowed with the food. Then comes the question of diagnosing dilatation of the stomach. You may have splashing in the abdomen, which may not necessarily be in the stomach. Occasionally the large intestine is so distended and relaxed with fluid, especially in the U-shaped bend, that it gives rise to splashing. Hence the importance of making out that the splashing is in the stomach. I know no better way of determining that than by a combination of auscultation and percussion. You take some part where you know the stomach is, and place your stethoscope upon it. Then tap with your finger in different parts, approaching to the stethoscope, and when you come upon a part in connection with that over which you are listening you hear a distinct click. So I notice that in this case the ordinary outline of the stomach is considerably exceeded, and it is in that area that we find the splashing. In the case of the stomach I think this method is almost infallible. Of course it can be applied in parts other than the stomach, but not always with such certainty.

Now comes the question of the cause of the dilatation of the stomach. In this particular case we want a little more information before we can absolutely determine it, and that is the reason I have asked the patient to come into the hospital. The question is whether the dilatation of the stomach is due to simple relaxation of the

stomach walls, or whether it is due to stretching from some obstruction at the further end of the stomach. It is always a difficult matter to determine this in these cases. Simple dilatation of the stomach without stenosis of the pylorus can be recovered from, but if there is a carcinomatous mass at the pylorus, that cannot be recovered from, or, at any rate, can only be got rid of by actual removal of the pylorus; recovery can only occur after a very serious operation. There is a law which has been laid down in regard to this matter, which I do not think is reliable. It is said that if you have obstruction of the pylorus, you will see the stomach wall struggling against the obstruction. As a matter of fact, you do not see any such thing as a rule; you can, of course, occasionally see it, but it is not at all to be relied upon. When I came to examine this patient the other day, I thought I made out a lump on the right side, which we can now feel in the neighbourhood in which one would expect the pylorus to be, but it must be remembered that the pylorus can be in almost any part of the abdomen. Whether the mass which we can feel now is a pylorus or not, is a matter for consideration, because it is very close to the neighbourhood of the gall-bladder, and it may conceivably be the gall-bladder containing a stone. There is, therefore, a doubt in the case, and how are we to solve the doubt? I think the proper treatment is to wash out the stomach, so as to reduce the dilatation as far as possible, and so to relieve the patient of the great distension. Examination of the contents of the stomach may also help one by enabling us to search for free hydrochloric acid, which may be absent in carcinoma of the stomach. Anyhow, after the stomach has been washed out we shall be in a much better position to appreciate what the lump is which we can feel. With regard to the washing out of the stomach as a remedial measure, I think this is greatly overdone. I think it a very valuable method indeed, but the point I want to enforce is that you should never, if you can help it, put the stomach-tube into the hands of the patient himself to use. Of course, quite naturally, a doctor desires not to multiply the number of attendances he gives to a patient, and perhaps it may sound rather insistent to say that you must always pass the stomach-tube yourself. At the same time I strongly advise you to do so, unless in very exceptional cases—which cases I do not think are frequent. Most certainly you should never allow a neurotic patient to have the use of the tube himself or herself, because they will fly to the tube on the first pain, which may be a mere discomfort they ought to endure. I have more than once known such patients, on account of some trifling pain or disorder, to wash out a perfectly healthy lot of digesting matter, which ought to have been absorbed. At the same time that it is greatly abused, washing out of the stomach is a very valuable measure. I have seen sometimes dilatation of the stomach disappear after only two or three washings out. Apparently the mere irritation caused by the introduction of the stomach-tube, and the passing of a large quantity of fluid into the viscus, has been sufficient to stimulate the walls and cause them to contract to their proper size. That is just what you want. That cannot be obtained with any certainty by the use of galvanism of the stomach walls. Sometimes when you wash out a stomach you will find the contents extremely foul and fermented. Whatever is the cause, that fermented matter would probably remain there until the next meal, and it is ridiculous to expect digestion to go on if you put fluid into such a puddle as exists in this stomach. One word of warning I would give you, namely, that there is not the slightest reason for washing out a patient's stomach if he can wash out his own stomach by tickling the back of the fauces—that is to say, if he can vomit. Why pass a stomach-tube for the man who can vomit? Still, sometimes you get a case where the dilatation of the stomach walls is so great that it is impossible for the patient to vomit; those are the cases for the use of the stomach-tube. I propose to have this woman's stomach washed out and cleared of these foul contents, and we will then see what the effect of dieting her is. After that we shall be able to investigate more fully the lump which we have found in the right side.

Now, gentlemen, I must proceed with the ordinary dyspeptics, anæmics, and hypochondriacs, who, unfortunately, take up in the out-patient room so much of the time which one might otherwise devote to teaching.

On the Management of Acute Traumatic Pneumothorax.

On the Management of Acute Traumatic Pneumothorax.—Rudolph Matas ('Annals of Surgery,' April, 1899). The phenomena attending the sudden admission of air into normal, healthy pleura are of such an alarming nature, in the majority of cases, that many surgeons deprecate any operation upon the thoracic walls that necessitates the production of an acute pneumothorax. Quenu and Longuet, in a recent paper on thoracic growths, based upon an analysis of thirty-four cases in which the operations involved the pleura, classified the manifestations observed in thoracic resection into three categories: (1) Slight manifestations, including irregular respiration and weakening of the pulse. (2) Symptoms of moderate severity; sudden weakening of the pulse, alarming irregularity of respiration, with persistence of dyspnœic symptoms, in one case for ten days. (3) Grave and fatal manifestations. These including alarming dyspnœic symptoms, caused by embarrassed respiration and cardiac action, and, at times, sudden and fatal collapse.

The mechanism by which this sudden collapse of the lung gives rise to such disastrous phenomena has been the subject of much investigation. It must be something more than the mere suppression of the aërating capacity of one lung, for we know that this is not incompatible with life or with a satisfactory respiratory capacity. Those cases in which fatal asphyxia develops the instant the pleura is opened can be accounted for in no other way than by some form of reflex inhibition of the cardio-respiratory apparatus in the medulla. Rodet and Pourrat concluded, after a series of experiments, that the inertia of the collapsed lung completely suppresses the stimulation, which the sensory fibres receive from the constant movement of air in the lungs and which is perhaps necessary to the respiratory reflex. These observers seemed to see an analogy between the changes that take place in open pneumothorax and in section of the vagi, and see in both conditions the same explanation,—namely, the suppression of the centripetal impressions that are transmitted from the lungs to the medulla, only that in one case (section of vagi) the suppression of respiratory movements is brought about by anesthesia of the lung, and in the other (pneumothorax) by the immobilisation and compression. Another interesting point brought out by the researches of Rodet and

Pourrat is that the dangers of acute pneumothorax are very much diminished by the repeated injections of small quantities of air into the pleura.

Many preliminary operations have been devised to prevent collapse of the lung when the pleura was to be opened, the principle of the majority of which was the formation of adhesions between the lung and pleura. Quenu and Longuet recommended, as a preliminary operation, the anchoring of the lungs to the ribs by means of a curved needle and thread, including in the suture the intercostal muscles, pleura, and lung. The procedure that promises most benefit in preventing pulmonary collapse is the artificial inflation of the lung and the rhythmical maintenance of artificial respiration. The perfection of the Fell-O'Dwyer apparatus has made this perfectly feasible; with this apparatus efficient and prolonged artificial respiration may be carried on, the procedure is not a dangerous one, the operation is suitable to all ages and requires no especial skill, and if necessary the anæsthetic may be administered through the tube.—*University Med. Mag.*, June, 1899.

The Laryngoscopical Diagnosis of Sex.

The Laryngoscopical Diagnosis of Sex.—What have been felicitously termed the "secondary sexual characteristics" by Bland Sutton seem to be coming more and more into recognition as of importance in medicine. Among them is the voice, and the subject of the "Voice in Diagnosis" has lately been handled by Dr. Alexander J. C. Skene in a masterly way. The respective qualities of the masculine and feminine voice depend upon anatomical differences in the larynx in the two sexes. On the strength of a knowledge of these differences Dr. E. Berthold ('*Archiv für Laryngologie*,' ix., 1, 1899; '*Laryngoscope*,' May) recently made bold, as the result of a laryngoscopical examination, to question the reputed sex of a person who came to him dressed as a woman. He discovered that the vocal cords were broader and longer than those of a woman, and an examination showed that his suspicion was well founded; the individual had the genitals of the male, although they were misshapen. Subsequently a Röntgen ray examination showed that the thyroid cartilage had become ossified to an extent that takes place only in the male.—*N. Y. Med. Journ.*, June 10th, 1899.

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DEMONSTRATION OF CASES AT THE WEST LONDON HOSPITAL,

May 29th, 1899;

With Remarks on the Diagnosis and Treatment of some Diseases of the Skin.

By PHINEAS S. ABRAHAM, M.A., B.Sc., M.D., F.R.C.S.I.,

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GENTLEMEN,—I first wish to show you—1. A case of acute eczema, which has just come to the hospital. The patient has been affected for five weeks. It commenced on the thigh, and had spread to the perinæum and penis very severely, and more recently appeared on the face. He is a driver, and, no doubt, the exposure to the wind and dust has enhanced the condition of affairs. We shall expect an improvement in a very short time by means of a very mild tar application in the form of a lotion, and an ointment which we use very largely here and at Blackfriars Hospital, containing oxide of zinc, acetate of lead, subchloride of mercury, and a little nitrate of mercury. It is what we call at Blackfriars the " Ung. Hydrarg. cum Plumbo." The secret of these applications, in acute eczema especially, is that the ointment contains a very small amount of each ingredient, none of them, except the oxide of zinc, being at more than 10 grains strength to the ounce, the oxide of zinc being 20 grains to the ounce. Even these proportions are too great in some acute eczemas, and the ointment has to be diluted, or it may be made into a sort of paste with starch. There are cases of acute eczema which will not stand any form of grease, and sometimes you get skins which resent the application of ointment in any way or form, but they are very rare. Such cases are treated best either with weak lotions, containing calamine and a little antiseptic, or powders containing starch, oxide of zinc, boracic acid, and perhaps a small amount

of calomel, or some other mercurial. You will notice that this patient has also some few papules on his hands, as well as small, somewhat translucent vesicles. If you prick them, there is an exudation of a sticky character, which forms a yellowish crust. He will have a bath, containing a few drops of creolin, which is a tar preparation, but there will not be more than one drachm to four to six gallons of water.

2. Although I intend to show you this afternoon several typical cases of diseases, which are at once to be recognised, I thought it would be interesting also to show you one or two which are of a somewhat more doubtful diagnosis. This girl has an eruption of a rather uncertain character, and it has been present two months. It commenced on her arms, and has spread to the body from the chest and neck. It is now all over her body, thighs, and legs. The individual lesions are slightly raised, of a yellowish-brown colour, and some of them are ring-like. Many of them coalesce. The diagnosis rests between three things—seborrhœic eczema, pityriasis rosea of Gibert, and secondary syphilis. The first thing I saw was these spots on the flexor surfaces of the arms, which is a very typical position for secondary specific eruptions, and that made me go into that matter a little more carefully. As she is very fair, the brownish tint may be more apparent in her, but it is certainly present. There is, however, no evidence whatever of syphilis, no swollen glands, sore throat, &c.; and the history is negative—although we should pay little attention to this last point if the lesions were suggestive. The case rests, therefore, between pityriasis rosea and seborrhœic eczema. Some of these spots have a very strong resemblance to those of pityriasis rosea; they are somewhat rounded, with yellowish centres, and there is a slight indication in some of them of a roseate areola around. The condition is very itchy, and in most cases of pityriasis rosea the lesions are not itchy, and they are more raised and papular than is usual in that disease; moreover there has been no digestive or other disturbance. The next possibility is seborrhœic eczema, and probably that form which used to be called flannel rash, which has a tendency to form incomplete rings. Very often in seborrhœic eczemas there is a history of sebor-
ʼa of the scalp of some duration; in this case

there is not that history. She will be given a mild tar application in the form of baths, and an ointment containing the same substance, and under this treatment I believe the lesions will soon disappear.

3. This little girl is very interesting from several points of view. She has on her head patches of alopecia areata. If you examine with a lens, I think you will not find any evidence of the short hairs of ringworm, although when she first came to this hospital, a year and nine months ago, it was a very extensive and bad case of tinea tonsurans; her head was covered with diseased hairs. The tinea tonsurans has been cured for some time, but it has left alopeciac patches. It is an interesting fact that a great authority, Mr. Hutchinson, brought forward the theory, some ten years ago, that cases of alopecia areata were due to ringworm. He was very keen on the theory for some time, and I believe he still is. I examined a good many cases of alopecia areata after he made that statement, some hundreds, and I found, contrary to what I expected, that a rather large percentage of them gave a history of former ringworm, either in themselves or other members of the family. On the other hand, a great many gave no such history at all, and many cases I knew about personally never had any ringworm whatever. Therefore one cannot regard ringworm as the only cause of alopecia areata. Since then M. Saboreau has made quite certain what many of us had observed before, that in many cases of alopecia areata there is previous seborrhœa of the scalp, and Saboreau came to the conclusion that the bacillus of seborrhœa was the cause of the alopecia areata. I believe with him that a great many cases are due to that. I show you here alopecia areata which followed ringworm, and 1 may be able to show you on Thursday cases which have undoubtedly followed seborrhœa. There are also cases in which, we must admit, there has been previous affection in the scalp, and that there is some malnutrition through some nervous affection. Occasionally cases of severe neuralgic headaches have been followed by loss of hair. Therefore I still hold to the view which I enunciated many years ago, that alopecia may be looked upon as a symptom which may be caused often by the microbe of seborrhœa, as Saboreau maintains, sometimes by

ringworm, and sometimes, but more rarely, from some malnutrition or nutritive disturbance due to a nervous lesion, temporary or otherwise. But that is not the only point of interest about this little girl. Her mother told me she has a painful sore between the legs. On examining this I found an ulcer on the perinæum with the edges indurated, and she has enlarged and very painful glands in the groin. I have shown her to Mr. Bidwell, and he also is suspicious that it is a specific ulcer. Of course it is somewhat extraordinary. The mother gives me a history of a boy in the house having sores, and I do not know whether he has syphilis or not. I shall endeavour to get the boy to come up next time. Primary chancre in a child of that age is not unknown, and it is not always easy to find out how it has been acquired.

4 and 5. I now show you two boys who present rather unusual manifestations of a complaint which is very common in these parts, namely, impetigo contagiosa. In one case the boy has several lesions just above the patella, which have subsequently ulcerated. It has only existed a fortnight. The other boy has very bad ulcerations under the ear; there is a solution of continuity, with hæmorrhage, caused by taking off the bandages. All that has to be done for such cases is to use some antiseptic lotion mixed with hot water to soften the crusts and clean all things generally, and then apply the old-fashioned ammoniated mercury ointment, which is a certain cure for impetigo. Of course, if the patients are out of health, or have constipation, or anything of that sort, you can give something else. I think that children are perhaps more apt to contract impetigo contagiosa when they are run down in health, and in such cases a general tonic certainly does good. Still the disease may occur in the healthiest people. The ordinary methods of removing the crusts in these cases is by poulticing, but I have a prejudice against poultices, because I believe that the warmth and the moisture simply promote the cultivation of the micro-organisms, chiefly staphylococci, upon which the impetigo depends. I have seen many cases which have been made much worse by poulticing, and the same procedure often prolongs what should have been a five or six days' case into one of much longer duration. It is better, I think, to use an antiseptic lotion mixed in hot water to soften the crusts.

6. This rather elderly man was attending here some years ago. I have not seen him for three years. He was attending for two or three years with extremely bad psoriasis, which passed into a condition resembling pityriasis rubra; he was like a boiled lobster all over with extensive desquamation; the inflammation and pruritus were fearful. We eventually got him right, and his skin seems to have remained perfectly well for three years, which, I think, is a satisfactory result in psoriasis. I never say to a patient with psoriasis that I will undertake to cure the condition to the extent of preventing it from coming back, but I will undertake in all cases to remove the psoriasis for the time being. One may liken these cases to cases of catarrh. People who are liable to cold may have one cold cured, but that does not prevent their sitting in a draught and catching another; the cure of one is no safeguard against another coming. The orthodox method of treatment of these cases is by arsenic. I believe this patient had taken an immense amount of arsenic before I saw him, but without any benefit. My experience is that arsenic is of but little benefit in psoriasis unless the doses are so large as to produce a toxic effect, and the result would be just the same if the patient had an attack of typhoid fever or any other bad illness. I have had many cases in my practice in which patients have got intercurrent diseases, and while these were present the psoriasis has disappeared. So when arsenic acts on the disease I believe it does so in some such way, that is to say, by so interfering with the general nutrition that the psoriasis *inter alia* may be affected. We must remember also that psoriasis sometimes disappears spontaneously, and if that should happen while the patient is taking the drug, the latter may undeservedly get the credit. I do not deny indeed that when a patient takes arsenic the psoriasis sometimes goes, but I do not think it is proved that the result is due to the arsenic unless it is given in such large quantities that the person is made very ill. A bad attack of psoriasis can be always cured by external medication, and the application which produces the most rapid results is chrysarobin. The next best application is tar, and that is the chief treatment we adopt for it in

this hospital. Chrysarobin is disagreeable because of the stains it produces, and because of its liability to cause erythema. This tar never does, and, if sufficiently used, tar will clear away any psoriasis.

Now this patient comes back with psoriasis in the palms of both hands. At present he has not got any elsewhere, with the exception of a few guttate spots, so that he has a very different condition of things to what he had before. On the previous occasion, as I have told you, it turned into a general desquamating dermatitis. It is an interesting case, because if you saw only these palms you might very well mistake it for a tertiary syphilide. The patches have a similar serpiginous appearance, but they do not show the central scarring which you often get in the latter, or the tendency to spread at the edge. Still, I have seen a syphilide exactly like this. I have ordered him the old treatment—tar ointment and tar lotion, but no medicine. He is also attending the hospital for his chest; he is a sufferer from bronchitis.

7. The next patient is a man of 53, with a number of very extensive, and, indeed, extreme tertiary syphilitic lesions. There is one on the thigh, one below the knee, in the front of the leg, which is said to have followed a kick, one on the calf of the same leg, and two on the arm. These are all very large lesions. He has also an atrophied right testicle. He has no other evidence of syphilis, and will give you no history whatever of primary inoculation. He has had fifteen children, and they are all living. His wife has had three miscarriages, and that is the only evidence pointing to syphilis which we can gather at all. He says the testicle first enlarged and then shrank, and that began three years ago. We hope to clear up all these lesions in a week or two. He will have five grains of iodide of potassium with three grains of carbonate of ammonia in a little bitter mixture; in addition, we shall apply iodoform and our red compound ointment of five grains of red sulphide of mercury, five grains red oxide of mercury, and a little creasote in an ounce of vaseline. The case is interesting on account of the typical character of all these lesions; there is a punched-out cavernous worm-eaten appearance about everything, while every lesion has serpiginous edges. Another interesting

point is the absence of history. The man has had fifteen healthy children, and he is certain he has never had anything the matter with him. If such a case as this were not treated the ulcers would continue and get deeper, and a most horrible condition of affairs would ensue. I have a case now attending Blackfriars in a woman who has her leg in a frightful condition. It is improving under treatment, but when she first came some of the cavernous ulcers were large enough to admit one's fist.

8. A friend of mine, who is a private patient, has been kind enough to come here to let you see a very interesting condition of affairs. It is a case of keloid. Keloid is a very rare affection. It was first pointed out by Alibert, a celebrated French dermatologist, in the early part of this century, and he gave it the name cancroide, on account of its having been very painful, and in that way reminding him of cancer. He was also led to this name by the fact that it sent out prolongations like the claws of a crab (cancer). He changed the name in a few years to keloid for the same reason, *kelis* meaning a claw. This disease did not attract much attention for many years,—in fact, it was very rare. Alibert described a "true" and a "false" keloid, the "true keloid" being, as he believed, a spontaneous disease, arising of its own accord, or, as he called it, idiopathic, and the "false," the growth which arose from scars after burns or injuries. In 1848 Addison, who was a Guy's Hospital physician, wrote an important paper on what he called true keloid and false keloid. But he made the most extraordinary error of describing as true keloid the totally different disease which we know as scleroderma, in which the skin becomes hard and glistening, and which has nothing to do with keloid. Scleroderma, however, is still called by some people the "keloid of Addison." From time to time cases have been seen, and in 1870 Mr. Hutchinson pointed out that the distinction between true and false keloid did not exactly hold water. He believed that even so-called idiopathic keloid always arose from a scar,—the person might scratch himself very slightly, and if he had the tendency to the formation of these growths the keloid would appear. In 1880 a Committee of Inquiry was appointed by the Clinical Society on a very interesting case of keloid, which was

shown by one of the physicians at Guy's Hospital. This committee came to the conclusion that the distinction between true and false keloid must be abolished.   They found that idiopathic cases probably arose from some little scar, even from so small a lesion as an acne scar, or a mosquito bite.   In fact, there is a large number of cases on record of it having started from all sorts of scars, e. g. smallpox, lichen tropicus or prickly heat, &c. One interesting case was recorded many years ago, when the cat-o'-nine-tails was more frequently used than it is now, in which the marks on a man's back produced by this instrument became an enormous mass of keloid.   That was described by Sir Thomas Longmore, an old army surgeon.   The fact is, keloid may come after every possible skin lesion.

But even up to the present moment some authorities believe that there is a distinction between true and false keloid; and you will find that Kaposi, in his lectures, describes an idiopathic or true keloid, a scar keloid, and he speaks also of the hypertrophic scar which one very often sees after burns.   He believes that there are microscopic and pathological differences.   Everybody, however, has not found these anatomical differences which are described by Kaposi, and I think that they can be explained in this way:— One of the differences is that in the so-called true keloid, which is a fibroma or hyperplasia of fibrous tissue, the new growth is limited to the corium, the papillary layer is not affected, nor does the growth extend to the subcutaneous tissue. In the scar keloid he maintains that the papillary layer is affected, and that the growth of the new fibrous tissue is more irregular.   But I explain that in this way: if you have a very small solution of continuity, and a keloid grows from that into the neighbouring skin, your section probably takes place outside the original small scar.   If, on the other hand, the scar or burn be comparatively large, with much of the original tissues irregularly destroyed, the new keloid tissue forming in and around is likely to be more irregular in the disposition of its elements.   We know that keloid is really a hyperplastic growth of fibroid tissue. In the early papules you find fusiform cells chiefly situated around the blood-vessels; and in the older formations at their periphery, and in the spurs, you may see a similar perivascular development of

young fibrous tissue.   As the fibrous growth proceeds these vessels are pressed upon, and consequently become atrophied, and the mass comes to be simply a tumour of fibrous tissue.   The most common position for keloid is on the chest over the sternum, as in the patient exhibited, but it may come anywhere.   The last case of the kind I had was in a gentleman whom I showed at the Dermatological Society of Great Britain and Ireland.   He had a number of great bosses of this growth on the side of the chest.   He described it as commencing after an abrasion from a broken brace-buckle; he scratched the part and the nodules came out all round.   The curious point was that some of them ulcerated.   That is a very rare complication indeed in these cases,—in fact, there are only two or three such instances on record.   One well-marked case of ulceration is described by Mr. Anderson, of St. Thomas's Hospital, some years ago.   I wish to call your attention to the roseate colour, the cartilaginous consistence, the nodular feel, and the fact of these little claw-like projections extending from it.   The most disagreeable factor is that many of these lesions are extremely painful.   This gentleman suffers very much from extreme itchiness and pricking sensations; that I am keeping down for him by antipruritic applications.   I propose to electrolyse these lesions.   Several cases of keloid have done well under this treatment, but, unfortunately, not all.   The patient, however, knows the condition of affairs, and I do not pretend to say that he will certainly be cured.   Still, I think improvement may be expected.   Mr. Hutchinson maintains that keloids have a tendency to disappear spontaneously in the course of time.   That is no doubt so, but many cases have lasted a very long time—through life.   Etiologically, we simply do not know why an individual should have a tendency to the formation of these lesions.   We speak of idiosyncrasy, but that does not explain anything.   Excision was tried formerly as a treatment to these conditions, but in most cases without any success.   I believe that Sir William Ferguson, some years ago, successfully treated one in this way, and that Mr. Hutchinson had a similar successful case.   It has been pointed out by Dr. Crocker that possibly if the growth be excised sufficiently widely, a successful result might ensue; but, as a general rule, I doubt that, be-

cause in one case I had in a woman, who had a number of keloid growths about her legs with pruritus, keloid occurred wherever she scratched herself. In her case the only really effective treatment by this means would have been to amputate her legs! Possibly in some very localised cases excision might be effectual, but if the cause be constitutional that method would not be a remedy.

I am giving my friend thyroid gland, experimentally only; and, of course, I shall not push it

because salivation set in. She took the anæsthetic very badly, and for three days she was in a very uncomfortable condition. This treatment of scraping and thorough application afterwards of acid nitrate of mercury is, I think, still as good a way of treating these cases of lupus as any we have. Some years ago I had several cases under the influence of Koch's tuberculin; some of these did extremely well. I still show occasionally one or two good results from the use of tuberculin. But the majority of the cases did not do well,

to the extent of making him ill. We know thyroid gland often has an effect on the nutrition of the skin; it has had some good effect in scleroderma, but scleroderma is not the same disease as this. Still, it is worth trying.

9. This little girl, who is an in-patient, presented a most extensive case of lupus of the thigh. I operated upon her the other day, scraping it freely and treating it afterwards very freely, perhaps a little too much so, with acid nitrate of mercury. I say I perhaps treated it too freely,

most of them having shown no permanent, although there appeared to be some temporary improvement. Some few of the patients were so near disappearing from the scene in consequence of the injections, that I have been very much prejudiced against the use of it ever since. I have not tried the new tuberculin in any case of lupus. It has been tried by others and written up, but I know some of the cases which have been thought to be successes, have proved ultimately not to be anything of the kind, the con-

dition having reverted in a short time to the state it was in before. You will see this little girl had lupus very extensively all round the buttock and thigh, an enormous mass. After the great amount of damage to tissue which you appear to do with the acid nitrate of mercury, you hardly expect to find such a perfect re-formation of tissue as actually occurs. We know that if we apply acid nitrate of mercury to the healthy skin it leaves bad scars, but it does very well in lupus, and since I have used it I have had some very good results.

10. This man I show you, aged 36, is a case of lupus of the face of an extremely severe and extensive character. The whole face, with the exception of a band an inch broad on the top of the forehead, is involved in one mass of ulceration, the eyes being very badly affected also. When this condition started he was six years old. Twelve years ago he was treated, but apparently not by injection. A commencing slight case of lupus one can treat satisfactorily with the acid nitrate of mercury alone, but in such an extensive case as this that is impossible, and the best plan is to scrape it. Mr. Bidwell, one of the surgeons at this hospital, believes very much in excision of lupus, and from that method of treatment he has had some extremely good results. Of course, he puts on Thiersch's grafts afterwards. Unfortunately some of the cases have recurred. In one case which we had together, and which I examined microscopically, the lupous tissue appeared in the centre of the graft, quite a long way from the edge. It was a case of a big lupus on the shoulder, on which a large graft had been put. It is possible that although an enormous sweep was made of the tissue around the ulcer, the tissue below must have been inoculated somehow, and the lupus must have grown up from below. There is no history in this man's family of tuberculosis. When he first came to me, two weeks ago, his face was very much puffed out and inflamed. When the lupus is very much inflamed you can often make a diagnosis of lupus by pressing one of the parts with a glass, and when the blood is extruded from the part the yellow apple-jelly appearance of the growth becomes obvious. I propose to scrape this case and treat it with acid nitrate of mercury. Examination for the tubercle bacillus in such cases is generally unsatisfactory.

I have examined for it in seventeen or eighteen cases of lupus, and have not been able to find it yet. That is a common experience with others. You may examine dozens of cases of lupus without happening on the bacillus. Some people think that the bacillus is nothing to do with lupus, but we are certain it must be connected with it, for if you take a piece of lupus tissue, and put it into that pathological barometer, a guinea-pig, the animal is sure to get tuberculosis. It is chiefly on that account that I have accepted the connection between tubercle and lupus.

URETEROTOMY AND PYELOTOMY.

By HENRY MORRIS,
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By ureterotomy is meant the longitudinal division of some part of the ureter, and by pyelotomy an incision into the renal infundibulum for the purpose (1) of testing the patency of the ureter; (2) exploring for calculus; or (3) removing an obstruction either from within their lumen, or in the substance of their walls, with the object of the re-establishment of a good channel for the urine from the kidney to the bladder. It may, therefore, as a definitive operation, be required (1) to extract an impacted calculus, or (2) to divide a band, stricture, valve, or cicatrix. As an exploratory or diagnostic operation the incision of the ureter is followed immediately by the passage of an ureteral sound or bougie to test the patency or otherwise of the duct. It has been proposed and practised in four cases by Howard Kelly ('Operative Gynæcology,' vol. i, p. 465) to ascertain if the ureter had been included in a mass of ligatured tissue during the course of abdominal operations. Pyelotomy or ureterotomy should be employed in every case in which the kidney is explored, unless the ureteral sound can be passed along the ureter from the wound in the convex border of the kidney substance. Plastic operations for the closure of accidental wounds, and "resection," or the excision of a length of the duct and the rejoining of the divided ends, are not included under these terms. Pyelotomy may best

be considered with ureterotomy, as it is employed for the same purposes; and often the incision extends into both ureter and renal pelvis, and then the operation is named pyelo-ureterotomy. Ureterotomy may be practised upon any part of the ureter, and has been performed through the bladder, the vagina, the rectum, and


Diagram showing the direction of the lumbo-ilio-inguinal line for exposing the ureter.

the abdomen across the peritoneal cavity, as well as by various routes through the abdominal and pelvic walls without opening the peritoneum. (See ' Clinical Journal,' June 28th, 1899.)

Choice of Method.

When any part of the abdominal section, or the first part of the pelvic section of the ureter, either in the male or female, is to be the seat of the operation, the retro-peritoneal method along the course of the lumbo-ilio-inguinal line, *indicated in the accompanying diagram*, is the line of election. In the male the whole of the pelvic section of the ureter, quite down to the bladder can be reached, without opening the peritoneum, through the incision of the

abdominal parietes along the lower or anterior half of this line. This, however, is not the case in the female, in whom the sacral or vaginal route is to be preferred.

The *vesical* and *rectal* routes have been employed in exceptional cases of uretero-lithotomy for calculi impacted at the extreme lower end of the ureter.

The *transperitoneal* or *intra-peritoneal* ureterotomy is to be condemned, excepting, possibly, when done for exploratory or diagnostic purposes in the course of abdominal operations to test the patency of the tube. Even then it is not to be adopted unless the operator is absolutely sure of the aseptic state of the urine, a confidence he is often far from possessing.

The advantages which have been claimed for the transperitoneal route for the purpose of *merely examining the ureter are—*

1. The slight gravity of laparotomy.
2. Greater certainty and rapidity of operation.
3. Minimum amount of injury to parts.

Nos. 2 and 3 are very doubtful; in most cases I believe No. 2 is wrong as regards the discovery of the ureter itself.

But for *the performance of ureterotomy* it must be reserved for cases in which the contents of the ureter are believed to be aseptic and the ureteral wound can be perfectly closed: thus it is inapplicable for extraction of impacted calculus, and for division of strictures or valve formations, though suitable for certain cases of grafting the ureter into bladder or bowel. I am an opponent of abdominal nephrectomy, except for tumours under certain conditions: the lumbar operation, as a general rule, is and always has been in my opinion the proper one. But the objections I entertain to the peritoneal route for operations upon the ureter are, if possible, still more decided. Even the mere exploration of the ureter by the transperitoneal method should be avoided when there is any indication as to which ureter and what part of it is concerned; for, in spite of the exemption from serious risk which the aseptic and antiseptic precautions afford, the shock caused by a free handling of the abdominal viscera is sometimes considerable, and ought not to be disregarded. In reference to this subject I will quote the words of two recent French writers, which give a fair idea of the views of the

majority of French surgeons of the greatest experience in this branch of surgery. They express my own opinion pretty exactly. Dr. Jean Liaudet (pp. 113, 114) says of transperitoneal ureterectomy, " It is to be forbidden completely," and of transperitoneal nephrectomy he adds, " It is judged to be bad, and a thing to be abandoned;" and he sums up his remarks by saying that, in cases in which the surgeon has no alternative but the transperitoneal method of ureterectomy, the best thing is to abstain altogether from the operation. Glantenay (p. 54) remarks that the peritoneal method offers less certainty of discerning the ureter, and less security against risks, and on this account it ought not to be adopted for ureterotomy, especially if the ureter is much altered, or very adherent, or filled with pus. He adds, " It is then no longer a question of surgical preference which should regulate the choice of the operator, as the extra-peritoneal method is clearly obligatory."

Intra-peritoneal Ureterotomy.

If intra-peritoneal ureterotomy is performed in the course of an abdominal operation, undertaken for some other purpose (and under no other circumstances should it be done) the peritoneum should be divided to the extent of 1½ or 2 inches parallel with the ureter, but a little to the outer side of it, not immediately over it; the peritoneum should then be dissected up, and the ureter exposed and incised longitudinally and only to the extent requisite to accomplish the purpose in view. This incision in the ureter should be made as far towards the posterior aspect of the duct as possible, so that the peritoneum when replaced should not be resting immediately upon it. The ureteral wound should be closed by fine silk sutures passed transversely through the outer and middle coats of the duct, after the manner of Lembert; the divided areolar tissue, which sometimes forms a thick sheath for the ureter, should be drawn together and stitched over the duct; and finally, the peritoneum should be placed back in position and secured by one or two fine silk sutures. No compress or packing of iodoform gauze or other material should be employed, but the abdominal cavity should be completely closed up, unless a drain-tube is introduced for reasons connected with the condition for which the cœliotomy was

undertaken. The best place to seek for and open the ureter from within the abdomen is at the pelvic brim, where the termination of the common iliac artery is a good guide to the tube.

Extra-peritoneal Ureterotomy.

Three routes to the ureter for the purpose of ureterotomy may be taken: (1) the lumbo-ilio-inguinal line, or some part of it, (2) the sacral, and (3) the vaginal. A fourth, the perinæal, is of very limited application for certain cases of impacted calculi.

(1) *The lumbo-ilio-inguinal.*—When the operation is commenced as an exploration of the kidney and ureter, the usual oblique incision in the ilio-costal space will be made, and should subsequently be continued as required further and further forwards and downwards—passing the anterior superior iliac spine an inch to its anterior or inner side—towards the middle of Poupart's ligament, and then onwards parallel with and an inch above it, nearly as far as the external abdominal ring.

When, either by the clinical symptoms, by palpation of the abdomen, or by rectal or vaginal palpation, or by a previous exploratory cœliotomy, it is known that the ureterotomy is to concern the pelvic section of the duct the incision of the parietes should still be in the same line as the above, but need not extend nearly so far backwards and upwards. It should be commenced on a level with the anterior superior spine of the ilium an inch to its front and inner side, and be prolonged downwards and forwards and inwards to the extent requisite to bring the ureter well in view. When the peritoneum has been reached it should be carefully detached with the fingers and by a few touches of the scalpel, and gently dragged towards the median line and held by an assistant. A flat sponge should separate the fingers of the assistant from immediate contact with the detached peritoneum. It must be remembered that the ureter, firmly adherent as it is to its outer face, especially in its abdominal section, will be detached with and must be sought for on the peritoneum; and neither the assistant's fingers nor the sponge must be placed so far over the detached peritoneum as to impede the search for the tube.

(2) *The sacral route* may be employed in either sex when the lower part of the pelvic section of the ureter is concerned. It is better adapted to

the male than the female pelvis, because of the increased difficulty caused by the broad ligament and the number and direction of the vessels of the ovary and uterus. The best plan of reaching the outer surface of the peritoneum on which the ureter will be found is that of Delbet. (See 'Clinical Journal,' June 28th, 1899.)

(3) *The vaginal route* for exposing the juxta-uterine and juxta-vesical part of the ureter is best carried out by Doyen's method. (See 'Clinical Journal,' June 28th, 1899.) Venous hæmorrhage is likely to be troublesome in this operation on account of the free plexus which surrounds the ureter here.

When the ureter has been exposed, no matter by which of these routes, it should be incised longitudinally on its posterior wall to the extent demanded by the condition for which the ureter-otomy is being done.

The ureter at the point of operation should be sufficiently detached from its connections to be conveniently accessible for the necessary manipulations. This separation should be made carefully so as to avoid injuring the peritoneum, or the spermatic or other vessels in relation to the part of the ureter which is being freed; nor should it be detached to any unnecessary extent. It is not always requisite to so far detach it as to be able to bring it right out of the wound, as has sometimes been recommended, nor to reflect its cellular tissue investment from off it for more than one half the circumference of the ureter. The wound should be protected from contact with pus or urine by packing some small pieces of sponge or iodoform gauze about the ureter at the point to be opened. If the ureter-otomy is being done to extract a calculus, the incision should not be made directly over the calculus if it is possible to move the stone upwards to a point where the ureter is probably dilated, and where its walls have not been damaged by prolonged pressure by the calculus. The wound in the dilated ureter or renal pelvis should be closed by sutures, but the precise manner of passing them will depend upon the purpose for which ureterotomy or pyelo-ureterotomy is performed. When the ureter is not dilated, and especially if it has very thin walls and a small lumen, sutures should not be employed, because then there is fear that a stricture or contraction may

follow the process of repair. After uretero-litho-tomy, and also when ureterotomy is done with a diagnostic object, the sutures should be passed transversely to the line of incision. Three or four sutures should be used for an incision from ¾ of an inch to an inch in length. When operating for stricture the cicatricial or stenosed tissues must be cut completely through. Whether this is done by making the incision from above downwards or from below upwards is a matter of convenience. The sutures should be passed in the longitudinal direction, and the upper and lower ends of the longitudinal wound brought together. The line of incision will thus be changed into a transverse direction. The sutures should not in any case be allowed to penetrate the mucous membrane, if the walls of the duct are thick enough to carry them without their doing so. In operating for stricture or valve formation it will in most instances be necessary to make a separate small opening, either into the renal pelvis or into the ureter, for the purpose of passing a probe or a bougie through the stenosed part.

Fenger, speaking of ureterotomy near the kidney (pyelo-ureterotomy) for the division of valvular obstruction, says, "The operation for valve formation can best be done (see p. 271, 'Annals of Surg.,' 1894) by the extra-peritoneal lumbar incision. The dilated pelvis or hydronephrotic sac is easily found and opened by a longitudinal incision. The opening of the ureter into the sac should be looked for, but cannot always be found, as in some cases it is very narrow. In such cases it may be treated by incising the ureter below the sac, and passing a probe upwards towards the pelvis. The valve or inner wall of the ureter running in the sac is now divided longitudinally from the opening in the sac, and the resultant wound treated in one of the three following ways:

(*a*) By turning the flaps out and uniting them to the inner wall of the sac by sutures (Trendelenburg, Küster);

(*b*) By drawing the corners of the longitudinal incision together with one suture, transforming the longitudinal into a transverse wound, as in my operation; or

(*c*) By uniting the wound longitudinally with numerous fine silk sutures, "taking in the two

outer coats of the ureter and sac, and avoiding the mucous membrane (Mynter)."

Question of sutures.—Though there is no doubt as to the necessity of sutures in intra-peritoneal ureterotomy, opinions differ widely as to their use in the extra-peritoneal operations.

Le Dentu thinks they are requisite for success, save in the cases where the wound is near the renal infundibulum. Tuffier employed them in his experiments, and recommends them in operations on man. Bardenheuer and Twynam used sutures in their extra-peritoneal operations. In Twynam's case leakage of urine and some suppuration followed, but a cure finally resulted. Doyen also used sutures after removing a calculus by the vaginal route. On the other hand, Van Hook is of opinion they are unnecessary, as these wounds, he says, unite rapidly if left to heal by granulation. Cabot goes further, and considers sutures actually harmful, because, owing to the thinness of the walls of the ureter, it is very difficult to prevent the sutures penetrating the lumen of the canal and there acting as the nucleus for the formation of fresh calculi.

Whilst admitting that sutures are not essential if drainage as a precaution in case of leakage is provided for, and though I know from experience that longitudinal wounds of the ureter heal well without them, I yet recommend and employ them in all cases on the renal pelvis, and on the ureter itself if dilated, but not otherwise. Unless the edges of the wound have been much contused, or the urine is very septic, sutures well applied hasten the healing and prevent the escape of urine and the formation of a fistula. I am in the habit of incising the renal pelvis for the extraction of calculi whenever they present at, or are readily reached through its walls; and I always close the opening by one or more sutures, no matter what the condition of the urine, with the result that, as a rule, no urine escapes through the lumbar wound. The walls of the renal infundibulum are usually, and those of the ureter are often thick enough to hold very fine silk sutures passed in a small round needle without their penetrating the mucous membrane; and even if the sutures are not entirely outside the mucous membrane I do not think it much matters if Lembert's method is adopted. The dread of their becoming the nuclei of calculi is often repeated; but so far as I at present have found it has no more foundation in fact than the former similar scare about sutures passed into the renal parenchyma. Ample experience has shown that sutures remain in the kidney substance for months and years without having any salts deposited upon them. It is certainly much better to make the effort to secure the direct passage of urine to the bladder by fastening the edges of the wound together, than to leave the wound free for the escape of septic urine into the cellular tissue spaces. If extravasation is mechanically prevented by the sutures for a few days, time is given for the primary union of the tissues around; and this accomplished, there is additional security afforded by the cicatricial material against extravasation later on.

The parietal wound should be carefully brought together by deep sutures, not layer by layer by means of buried sutures; and as a security in case of extravasation of urine a small drain-tube should be kept in for two or three days.

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XXI.

GENTLEMEN,—There are other metallic salts besides those I have mentioned which are irritant. The salts of *iron* are sometimes irritant when taken in large quantities, especially the sulphate of iron. *Bismuth* is another substance which is sometimes irritant, and it has caused irritant symptoms when taken in large quantities. The irritation is said to be due, as a rule, to the adulteration of it with arsenic or some other metals. *Potassium bichromate* is also a caustic and strong irritant. Another one which must be mentioned is *silver nitrate.* Silver nitrate, as you know, is a caustic and irritant, and the danger of it depends very much on the degree of concentration, as with other irritant poisons. The danger of dropping a little solid nitrate of silver down a man's pharynx would be very great indeed, and that is an accident which has happened. I would, therefore, caution you to be exceedingly careful when you are applying any caustic to a patient's throat.

Nitrate of silver coagulates albumin, and albuminous liquids are probably the best antidotes. We hear sometimes of chronic silver poisoning. I say *hear*, because I have never seen a case. If given for long, silver is said to colour the skin brown or black, and in the old days, when nitrate of silver was a favourite remedy for epilepsy, and when epileptics accordingly took small quantities for weeks, months, and even years, I believe there were some few cases in which the body became profoundly tinged.

Now, proceeding with the irritant poisons, I shall pass lightly in review some of the common *vegetable irritants*. I shall hope to be able to show you some of the indigenous irritants and other poisons in the course of a few days. It is easy to get the whole of them together, but it is not easy to get on a particular day the plant with which I happen to be dealing. Many of the irritant poisons are used in medicine, and I suppose we must take them in some kind of order. We will begin with the plants belonging to the natural order, *Euphorbiaceæ*. I have upon the screen a picture of a moderately common euphorbium—the euphorbium lathyris. The euphorbiaceous plants have this peculiarity, that the flowers are unisexual, the male and female flowers grow upon different stems. The euphorbiaceous plants are often milky. The commonest of common weeds in all gardens is the "milk weed," a euphorbiaceous plant, which I do not bring forward as a poison. There are many well-known plants, such as croton oil and castor oil plants, which both belong to the Euphorbiaceæ. Then, there is another euphorbium, the *E. officinarum*, which is a plant used largely in veterinary medicine as an irritant. The dust of that plant is very irritant indeed. The most important vegetable irritant poison is *croton oil*. I need not discuss croton oil; it is one of the most powerful purgatives in the pharmacopœia, and if taken too plentifully may set up an amount of gastro-intestinal irritation which may cause death. There is a case on record in which a child died in six hours from a dose of croton oil, the dose consisting of less than three minims. On the other hand, there is a case of recovery after half an ounce. A druggist took half an ounce of croton oil in mistake for castor oil. This was followed by vomiting, and he had violent purgation and collapse, but, nevertheless,

recovered. Again, it is quite conceivable, even with a thing like croton oil, that a big dose may be expelled more rapidly than a comparatively small dose, and thus be got rid of. A case was tried at the Liverpool Winter Assizes, in which the prisoners were charged with having caused the death of a man by placing in food, of which he and others had partaken, two drachms of powdered jalap, and two to six drops of croton oil. Several persons, including the deceased, suffered from vomiting and purging, but they recovered, and the deceased so far recovered as to go about as usual. But he was subsequently attacked with ulceration and inflammation of the bowel, from which he died.

One of the points which have been raised in regard to the croton oil seed, is that it has been given entire in the husk, and no ill result has followed. With regard to *castor oil*, it is said that the husk of the castor oil seed contains an irritant oil, which is scarcely less powerful in its action than croton seed, and serious mishaps have occurred from taking the refuse of castor oil after the proper oil has been expelled from it. Some of these euphorbiaceous plants are very irritant indeed, and very curious symptoms have followed from handling them. Some of you may know Dr. Pereira's work on Materia Medica; it is one of the most strangely interesting books upon an uninteresting topic that I have ever come across. It consists of three big volumes, and the facts which Dr. Pereira collected about drugs are often of very great interest. He mentions the case of a man engaged in grinding euphorbium, and who remained longer than was prudent in the room. Suddenly he darted from the mill room, and ran with great velocity down two flights of steps, and on arriving on the ground floor was heard to fall. Within five minutes, says Pereira, I saw him. He was lying on his back insensible and convulsed; his face was red and swollen, pulse frequent and full, and his skin very hot. I bled him, and within half an hour he was quite sensible, complained of headache, but he had no recollection of flying downstairs, which seems to have been performed in a fit of delirium. That is very interesting, and may be regarded as true, coming from Pereira. Euphorbium is an external irritant; it is used as a blistering agent in veterinary medicine, and I believe there is a case on record

where a person was punished because he put pow-
dered euphorbium into a maidservant's bed, caus-
ing a considerable amount of cutaneous irritation.
Among the Euphorbiaceæ there are the various
plants belonging to the class jatropha, one of
which furnishes arrowroot. They are West Indian
plants, and some of them are very irritating. They
sometimes have stinging hairs, not unlike the
nettle, and it is said in the West Indies that it is
dangerous to sleep beneath some of these trees.
The *Iatrophum manihot* is said to produce irritant
effects on those who touch it. A jatropha was
raised at Kew, and there is an instance of a person
coming in contact accidentally with some of the
hairs. In a few minutes there was swelling of the
lips and redness of the face, faintness, great pro-
stration of strength, and such a degree of collapse
that for some minutes he was thought to be dead.
But he rallied, and recovered. In another case the
pain and swelling in the part lasted for some days,
and an itching sensation continued for a long time.

With regard to the plant figured on the screen,
the *Euphorbium lathyris*, or caper spurge, its fruit
when pickled has been used as a substitute for
capers. But Sowerby and Johnson mention the
case of two children, aged six and fourteen, who
were killed by eating that plant.

With regard to British poisonous plants, there
is no doubt that some of them are exceedingly
poisonous, but I must remind you that it is a very
fine line that divides indigestion from poison. If
children fill their stomachs with indigestible
matter, stalks, stones, fruit, and so forth, they may
get irritant symptoms, and sometimes it is difficult
to determine whether a plant is merely irritant
from being taken raw or bolted by children, or
whether it is really poisonous. But with regard
to some of them there can be no doubt. Amongst
the plants of this natural order there is the so-
called *Mercurialis perennis*, sometimes called wild
spinach. It is said that this plant has proved
fatal when cooked and eaten as spinach. A party
of gipsies took some near Worcester, in 1820, all
were ill, and two children died.

I would again allude to the fact that the irri-
tants, concerning which I have just been speaking,
are many of them irritants when used externally.
Of course, we know croton oil liniment quite well,
and we know euphorbium, which is used in vete-
rinary medicine.

Now, I go on to another class of irritants,
namely, Coniferæ, that is to say, the plants which,
broadly, belong to the fir-tree type. These plants
all contain turpentine, or an analogous body, and
these turpentines are irritant when applied exter-
nally. We know that turpentine, if applied per-
sistently, will blister the skin. It may produce
pustular eruptions externally, and when given in-
ternally it purges and acts as an irritant upon the
kidneys, producing albuminuria, hæmaturia, and
painful micturition. One of the most important
of the Coniferæ is, I need hardly say, savine.
Savine is a species of juniper; it does not bear a
cone but bears a berry, the juniper berry. So
with regard to the yew tree. That, of course,
does not bear a cone, but it bears a berry, and
the yews have been separated under the name of
Taxacacæ. Savine is very important because it
has, from time out of mind, been used for pro-
curing abortion. Again, savine ointment is an
irritant which is used externally. The savine bush
is very like the juniper. The leaflets, or needles,
are exceedingly sharp; it has a characteristic
odour, and you can express savine oil from it.
The *Juniperus sabina*, or savine, is a very uncer-
tain abortifacient, and it is very doubtful whether
it has any specific action upon the uterus. It is
maintained by many that savine only acts as an
abortifacient when it produces intestinal irritation,
and the uterus contracts reflexly. It is said that
a woman may be killed by savine, and yet may
not abort. It has been used for such a purpose,
however, for one does not know how long, and
there is the old Scotch ballad of " Mary Hamilton,"
in which there occur the following lines :—

" The king hath gone to the abbey garden,
    And pulled the savine tree,
    To scale the babe fra Mary's heart,
    But the thing it wad na be."

This shows that, even in the hands of kings,
savine was a very uncertain abortifacient—" the
thing it wad na be." It also shows how long
it has been in use. It is because of its use as an
abortifacient that savine has been scheduled as a
poison. Among the cases in connection with the
use of savine is the case of Regina v. Pascoe, in
which a medical man was transported for giving
fourteen drops of savine oil three times a day to
a pregnant woman. The crime of abortion has
always been severely dealt with. Post mortem,

when savine has been taken, you find the smell, and you may find in the intestines the sharp green points from the twigs of savine. It is really by finding savine in the intestines that you come to the conclusion that it has been administered. Christison mentions a case of a female who took so much of the powder of savine that she was attacked with vomiting, hiccup, pain in the abdomen, and fever of a fortnight's duration. Nevertheless, she was not delivered until the natural time. A female applied to a pedlar to supply her with the means of getting rid of her pregnancy, and under his direction appears to have taken a large quantity of infusion of savine leaves at night, and again next morning. No medical man witnessed the circumstances, but it was ascertained that she had violent pain in the belly, and distressing strangury. (Savine oil, like turpentine, affects the kidneys.) On Sunday afternoon she miscarried, and on the ensuing Thursday she died.

Now, we come to another plant, the *yew*. I need not say anything about it because it is so common. It has occasionally been fatal to human beings. The male yew trees bear the pollen, and the female the berries, which have a sort of preputial shape, and are eaten by children without any harm. I suppose there is hardly anybody here who has not eaten yew berries, although few Coniferæ can be got to live in London, not even in the Botanical Gardens in Regent's Park. You may have noticed that in none of the parks of London do you see the yew tree, or Coniferæ, because these evergreens get choked by the soot, and die in consequence. Even at Kew the coniferæ begin to show the effects of London smoke. It is the leaf of the yew rather than the berry which does harm, and there are cases on record in which people have been killed from eating yew, and one of the cases—indeed more than one, if I remember rightly—occurred in lunatics, and some have occurred in those who have been putting up Christmas decorations in which the yew entered. It is exceedingly common for animals to be killed by yew, and it is very difficult to know what it is that causes the yew to be poisonous. In animals it seems to be tolerably certain that the yew is not uniformly poisonous. It is said that it becomes very much more poisonous after the boughs have been cut off and swept into a heap, an animal being poisoned more readily from eating from such a heap than when browsing direct from the living tree. It has been supposed that either the male or the female yew is the poisonous plant, but there appears to be no difference. Experiments have been made in that direction, and it has been found that both kinds of yew have poisoned, and both kinds of yew have been eaten with impunity. It is common to find a cow or a horse killed by eating yew, and yet in experiments no harm has come from animals browsing upon the yew tree. Therefore I must leave it, and say that the cause of the varied behaviour of the yew is not understood. It has been supposed that the cause is to be found in a difference of soil, but that is not the case. It may be due to the fermentation undergone by the leaves after they have been cut, but, again, that does not seem to be the case. Of course, it may be due to the season of the year. Therefore, here is a field for exploration.

Another plant is *colchicum*, which grows in the autumn. It is like the crocus, but bearing a purplish flower instead of a yellow one. Colchicum causes irritant symptoms—vomiting, purging, pain, and collapse. I once knew a case in the country, in which a rustic was left rather long in the ante-room of a doctor's surgery, and I suppose he got thirsty, for he went into the surgery, and apparently went round until he opened a bottle which smelt like sherry. He finished about half a pint of colchicum wine, and died of the symptoms of irritant poisoning and collapse. That is an interesting case, and should show you, especially if you are going to practise in the country, that you should not leave dangerous drugs where they can be got at. The active principle of colchicum is colchicin, and that acts more strongly than the colchicum.

Other plants allied to colchicum, which act as irritant, are those which yield veratria. Of the various plants of this order, Veratrum album, Veratrum viride, and sabadilla may be mentioned. Veratria also has a distinct action upon the heart, and causes a very slow muscular contraction. But, after all, it is not a poison of much importance.

Amongst other plants of the irritant order there are those belonging to the Ranunculaceæ, among which are the hellebores. The plant from which we derive podophyllin is of the same natural

order. Then there are plants which are acrid, belonging to the cucumber class, or Cucurbitaceæ. There is the elaterium and colocynth. We have an indigenous plant of the cucumber order, which is known as *Bryonia dioica*, which grows in the hedges. Its flowers are unisexual. It feels sticky, and has rough hairs upon it not unlike cucumber. In the autumn it comes to a reddish yellow berry.

More important, perhaps, than these irritant plants is ergot, a fungus which grows upon cereals in wet seasons, especially on rye. Ergot in large quantities is an irritant poison, and may be regarded as having a specific action upon the uterus, and a specific action upon the blood-vessels. It causes contraction of the blood-vessels, and hence is largely used as a hæmostatic. We give it internally and hypodermically in cases of hæmorrhage from internal organs. Ergot is a complex body, and in places where rye is largely used as an article of food, epidemics of ergot poisoning do occasionally arise, though they were very much more common than they are now. The physiological effects caused by ergot are gastro-intestinal irritation, and, it is said, a great contraction and diminution in volume of the heart, contraction of arteries, and *lowering of blood pressure*. That is said to be its peculiarity, although you get contraction of the heart and arteries, there is relaxation of the veins. In former days chronic ergot poisoning affected whole provinces, and it is a curious fact that chronic ergot poisoning has taken two different forms, it has taken a spasmodic form and a gangrenous form. When the ergotised grain produces spasms it does not produce gangrene, and when it produces gangrene it does not produce spasms; moreover, in widespread epidemics of ergot poisoning, the two classes of symptoms very seldom complicate each other. I suppose from that we must assume that there are differences in the fungus which grows upon the corn. It occurs in wet seasons, and in some parts of Russia they have had, quite in recent years, epidemics of ergotism. In Russia the form of ergotism which has been common is the gangrenous form. When an epidemic of ergotism is widespread you may get every degree of gangrene; there may be mere whitlows and necrotic points upon the fingers, and between that and the complete loss of all four limbs you may get any degree. Complete loss of

all four limbs from ergotism has been described; it is probably a very rare thing, but I mention the fact to show you the extremes between which it may occur. It is said that in both the gangrenous and the spasmodic form, the troubles generally begin with gastric irritation. There is in both forms alteration of sensation, formication about the limbs, a ravenous hunger, discomfort and weariness. When the disease takes the spasmodic form, the spasms are said to be clonic spasms of the hands and fore-arms chiefly, accompanied by great coldness of surface, and gradually advancing cardiac paralysis and death. In former days the spasmodic form was common in Germany, and the gangrenous form was common in France.

Going from ergot, which causes symptoms of a nervous character, we pass on to the other fungi, and I will shortly allude to them. It is, of course, very well known that all mushrooms are very apt to be poisonous, and they are poisonous from causes which are not very well understood. I remember, some years ago, calling accidentally, and without premeditation, on a friend of mine in the Temple. When I got to his rooms I found that they resembled a Channel packet boat more than anything else; ladies and gentlemen were laid out in all directions, vomiting into anything they could get hold of. They were all exceedingly bad, except the host, a sufficiently suspicious circumstance. On inquiry I found that these people had been to a neighbouring restaurant, and that they had eaten, "*vol au vent à la Financière*," a mysterious dish, into the composition of which there entered button mushrooms, and it was these button mushrooms apparently which had caused the trouble. It is a matter of common knowledge that mushrooms will occasionally cause such symptoms. Now, why do they cause such symptoms? Mushrooms are common articles of diet, they are eaten largely, and much appreciated. First, I would say that button mushrooms are hard and indigestible. The next thing I would say is that mushrooms are sometimes artificially grown for the market in very unwholesome places—in underground cellars, and other damp holes. That *may* have something to do with it. At any rate, I think we shall all agree that the mushroom is very differently flavoured, according as it is grown under conditions of that kind, or on open downs

or parks in the autumn. Perhaps the most important thing is that mushrooms collected for the London market, and not quickly sold, lie about in bulk, very likely under conditions which favour fermentation, and that really mushroom poisoning is a kind of ptomaine poisoning caused by micro-organisms which have grown on the fermenting mass. Whatever it may be, we have got to recognise the fact that mushrooms, that is to say, *Agaricus campestris*, which is a proper mushroom, are sometimes not wholesome, and have caused a great deal of trouble.

Now, fungi may be divided into the edible and the poisonous. Those which come into the markets as articles of food are of two kinds mainly, the *Agaricus campestris* and a few Boleti. In the *Agaricus* the spores are arranged in rays, while the Boleti have structure not unlike sponges, that is to say, honeycombed. In this country Boleti are practically never eaten. I do not remember seeing a Boletus exposed in Covent Garden, or in any market I have walked through. But you may go through markets abroad and see nothing but Boleti exposed for sale, and never a mushroom. I believe I am right in saying that in Italy they will not eat the *Agaricus campestris*. Probably there may be some condition in the soil which leads to their being unwholesome. With regard to the main facts, which enable you to determine whether a fungus is likely to be wholesome or the reverse, the following points are taken from Bentley. That the edible fungi grow solitary and in dry places. That is true in a sense. Of course, we know that if we go into a park where horses have been browsing, we find mushrooms, and you very often find two or three pretty close together. It is the droppings of the horses which forms the nidus for the mycelium to grow upon. Those who grow mushrooms will tell you that, if you want to cultivate them successfully, you must get the dung of an entire horse. The reason for that is quite plain. The testicles have nothing to do with it, but the entire horse is well fed, he gets a lot of nitrogenous food, and it is because he is highly fed, and because his food is nitrogenous, that you get the mushroom to grow upon his dung. Edible fungi grow solitary, and the poisonous fungi grow in clusters very often, and in dark damp places. If you walk through the woods in the autumn you can see the poisonous fungi grow-

ing up from the damp roots of trees, they are called toad-stools. Edible fungi, as a rule, are white or brownish. The mushroom begins as a white ball, and when it is quite ripe the rays get black, and before it is ripe they go through a graduation of tints. Many of the poisonous fungi, on the other hand, are bright coloured, and, as a rule, the bright coloured fungi should be avoided. One of the most poisonous fungi is the *Amanita muscaria*, or fly fungus, which has a bright red top with specks upon it. This is the fungus which produces muscarine, and is most dangerously poisonous. The flesh of a wholesome fungus is brittle, not tough or watery, and the flesh of the real mushroom undergoes no change of colour on exposure. But if you take some of the fungi, which are shaped like mushrooms, and break them, you will very often see that they turn instantly to a blue colour, just as an apple grows brown after it is cut. Remember, then, that those which undergo a change of colour after being opened are said to be dangerous. The juice of a healthy fungus, if there be any juice at all, is watery, not milky. Then, the odour of an edible mushroom is agreeable. Of course, some fungi stink to a degree which is almost indescribable, and I should think nobody could be got to eat them. Edible fungi taste pleasant, whereas poisonous ones taste unpleasant, and are of an astringent character.

The *Agaricus campestris*, in the early stage, is entirely covered with a velum, which is attached to the stalk. You will find when the fungus has spread that the velum gets broken, and the remains of it are to be found as a ragged fringe encircling the stalk.

Congenital Serous Cyst of the Infra-clavicular Region.— Walravens reports the case of a well-developed child of three years who presented a congenital tumour as large as an apple in the infra-clavicular region. Under chloroform narcosis the growth was removed, and was found to be composed microscopically of cysts having a connective-tissue wall and an endothelial lining, the whole covered by thickened epidermis. The origin of the tumour was the lymph and blood capillaries in the deeper layers of the cutis. The child recovered perfectly from the operation.

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NOTICE.

WITH MR. BOYD IN THE WARDS OF CHARING CROSS HOSPITAL.

I HAD this young woman under my care last year
for mutiple adenomata of the breast. I show
you her photograph taken at that time. The left
breast was then estimated to be three times the
size of the right, though they were both very
large. Even in the photograph you can make
out that there are elevations upon the uniform
surface of the breast due to three or four distinct
rounded masses, one of which was as big as a
good sized orange. These masses were smooth
and round, and moved freely in the breast sub-
stance. They had no effect on the nipple, and
there were no glands in the axillæ—in short,
they had all the characters of adenomata. She
was then twenty-one years of age, and the
tumours had been two years coming, so they must
have commenced when she was about eighteen.
They were enlarging rapidly when she came into
the hospital. I made an incision, of which you
see the scar here, directly inwards from the
nipple on to the largest growth; and through
this small cut I was able to reach the other
masses by dividing the breast substance. Having
removed four or five growths, I thought that I
had freed her from her trouble. But I heard, some
few months later from her doctor, that she had got
another little growth, and now she has returned
for further treatment. We noticed at once that
neither breast was so large as when she was first
admitted; the left was, and is still, decidedly
larger than the right. Both glands were alike in
general characters—firm and full of little no-
dules, like those so common in chronic intersti-
tial mastitis, only larger. But in the left breast
she had a considerable mass as large as an egg,
flattened somewhat, lying at the upper and inner
part of the gland. It was neither so clearly out-
lined nor so movable as the former growths.
There were in this breast also a few smaller
masses—like peas—a good deal larger than the

generally distributed nodules I began by mentioning. I operated on the left breast only 'last Saturday, and, as the wound is so recent, I will ask you to confine your examination to the right breast. I made an incision this time upwards and inwards from the nipple directly on to the distinct large swelling. I found I had got on to a very glandular adenoma, which shelled out, but not quite so easily as is usual with an adenoma. Close to this I found another as large as an almond in its shell. Then I cut through the breast into the largest of the nodules I suspected of being adenomata; I found it to be one, no bigger than a pea. It seems then that she pro-

or six adenomatous growths, in rather a small mamma, so that there seemed to be but little left after removal of the growths. As compared with my present case, both breast and adenomata were small. I am told that this young lady remains quite well, so I hope that she will have no further trouble. Adenomata—then usually called adenoma-sarcomata—occasionally recur, even after amputation of the breast, the termination, "sarcoma," being added in order to express that they are to some extent malignant. They are, of course, different from the adenoma which does not recur, though treated in precisely the same way. Mr. Raymond Johnson took much trouble

bably has several foci of adenomata left in the breast. The question is—What treatment should be adopted? The removal of these growths as they develop is very little trouble to her or to us: an anæsthetic, and, perhaps, a day in bed. It is always possible with adenomata that they will cease to develop; and, on general grounds, in a young woman of twenty-one, one would take a great deal of trouble to save the breast. Therefore, we shall just wait and watch. I should not think of taking the only alternative step until the treatment I have indicated had utterly failed. These multiple adenomatous growths are rare. I have operated in private on a young woman with five

to examine pieces of fat round about these recurrences, and he was able to demonstrate that, in the amputation of the breast, bits of breast-tissue had been left behind, and that it was from these in all probability that the continued growth took place. I now show you the adenomata which I removed on Saturday. They are perfectly encapsuled: there is no sign of invasion of the surrounding tissues. The surface is lobulated. The section is composed of glandular masses separated by connective tissue septa. It is interesting to know that you may have epithelial "rests" lying about unconnected with the main gland. You must remember that

the breast consists largely of developed sebaceous glands, each growing from a single epithelial involution.

The next patient is a woman, aged thirty-six. She complained of pain in the lower abdomen three years ago, which at first came on only after exercise, was dull and aching, lasted for a few hours, and generally ceased when she sat or lay down. It, however, gradually got worse, and twelve months ago she noticed a tumour in the hypogastrium, like an egg, and about as big, which was very movable. It was on the left side, but could be easily transferred to the right side. These attacks of pain finally became so bad that she had difficulty in doing her work. Her periods, throughout, have been quite regular, and have not given her any trouble. When admitted she was in good health generally. On looking at the abdomen, one saw in the left iliac and the hypogastric regions a swelling which appeared to be about the size of a cocoa-nut. It was smooth, very fluctuating, and so freely movable that I could still push, it over to the right side. The uterus usually lay against the left pelvic wall, and was quite movable; otherwise it was in a normal position—neither retroverted nor anteverted. Free movements of the tumour affected the uterus sufficiently to show that the two were connected. Clearly, it had a long pedicle. In operating, I made a small opening, not more than one and a half inch, through the linea alba; tapped the cyst, and let out about a pint of dark, greyish brown mucous fluid from the principal cyst, and drew it gradually out as it emptied. A little difficulty was caused by the presence of a few smaller cysts at the base. Then the pedicle followed, slender, and as long as my fore-finger. I transfixed and tied it with silk. The other ovary presented signs of a recent menstrual period, otherwise it was all right. The wound closed all right, and she has not had any symptom since. I show you the specimen. Here is the larger cyst, which held the mucous, hœmorrhagic fluid. The smaller cysts at the base have clear contents. Here is the Fallopian tube. It lay behind the cystic mass, and this lay on top of the úterus, tending to fall over it to the right, and thus, I imagine, displaced the uterus to the left. The pain she suffered may have been due to attempts at torsion.

The next case is a little child, who is the subject of spinal disease with psoas abscess, a condition which is very common, and which may therefore be interesting to you because we are so often called upon to treat it. First of all, we have to keep the child's health up to the highest point. We also need to keep the spine rigid, and yet to enable the child to be moved. I think the splint which is best adapted for these cases is a Thomas' double hip-splint, with an extension from the upper crescent behind to the head, capable of adaptation to children of different lengths. The splint can be taken hold of, and the child lifted as a whole without any risk of moving the spine. The child can be clothed, and can be carried out in the nurse's arms, or, better, on a suitable perambulator. Remember that this apparatus must be fitted well, if it is to be comfortable; and the points to be attended to are just the same as in the double hip-splint. Even in this splint a spinal curve will sometimes increase; this can be prevented by moulding a piece of poroplastic to the back of the child when lying, and fixing this into the uprights of the splint. [Mr. Boyd gave a minute demonstration of this splint, and also of Phelps' box-splint, which had certain advantages, but was not so easily handled.]

Some of you will, perhaps, remember this patient, as he has been in my wards for some months. Although he is so small, and his face is so childish, he is more than eighteen. Two and a half years ago, having been previously told that he was rickety, he began to get a deformity of the thighs, which consisted of a bending of the femora backwards and inwards at about the junction of the lower and middle thirds. Walking became increasingly difficult, and about two years before he was admitted the thigh bones gave way without the exercise of any violence at all. He has neither walked nor stood from that day to this. This photograph shows the condition of his thighs on admission. We then found that there was free movement between the fragments, and a good deal of tenderness about the part affected. This skiagram shows the state of the bones—the great angle between the fragments, and apparently one or two rounded calcified nodules in the interval. The skiagram gives the impression that the femora are rather de-

ficient in lime salts, because they have not thrown as strong a shadow as usual. The patient exhibits many other deformities. You will notice that he has very beaded ribs. His clavicles are curved just as you would expect to find in severe rickets. His right arm would be about normal in size and development for a boy of ten or twelve, but the lower radial and ulnar epiphyses are large. The left arm is considerably shortened owing to an F-shaped curve of the humerus, as from bad rickets; but the fore-arm, though

as the railway splint, to increase the efficiency of the extension. Unless some such contrivance is employed, the friction of the limb against the bedclothes is such as to almost destroy the effect of the extension. There is no union in either limb, and a good deal of tenderness remains. As to his chance of uniting, I am not very sanguine.

With regard to the nature of the trouble, the first idea that occurred to us was that possibly there were central symmetrical gummata; but

rather shorter, corresponds fairly to the right. The cranium is large. There is nothing wrong with the head bones, or with the bridge of the nose, with the eyes or teeth, nothing to indicate congenital syphilis; nor can we glean anything from him which would indicate syphilis in the family. As to treatment—I have used weight-extension to draw the thighs straight. The left is fairly straight now, and is in plaster; but the right was not so easy to manage. I have had it laid upon a simple modification of what is known

such are rare. There is, as above stated, no evidence that the boy has congenital syphilis; still, it seemed as likely as anything else, and therefore he was put on iodide of potassium, and kept on it for some time, without effect. His thyroid isthmus can be felt, but that tells us nothing of the state of the gland. As a shot in the dark, we thought the bone-state might be connected with the thyroid; so we gave thyroid extract, and he has been kept on it for a few weeks; but so far as I know, it has done nothing but quicken

his pulse, which is now 108 or 110. It has been suggested that this is a case of late rickets. There is undoubtedly evidence of rickets about him, but fractures in rickety people generally unite well, and I am sure it is not usual to have anything like a sudden breach without any violence at all. I do not know of anything like this in the history of rickets. Osteomalacia has been suggested, but that is not a diesase of early youth in males. If it is osteomalacia it is a very unusual form. Moreover, early fractures in osteomalacia unite; patients may break their bones again and again, but they unite. This boy's bones have not shown the least sign of union. Some have thought that this case was allied to those of multiple fracture. But these femora gave way at about the same time, without any violence, at corresponding points preceded by bending. An ataxic fracture has been suggested; his walking and his knee-jerks cannot now be tested, but he has no other symptoms of ataxy.

The next patient is a boy with acute necrosis of the leg. He gives a very typical history of this disease. His age is thirteen. He went to school, apparently quite well, one morning about two weeks after Christmas. Whilst at school he was seized with a bad headache, diarrhœa, and general feeling of illness. At the same time he got pain in his right leg, and was able to walk home only with some difficulty. He was put to bed, and seen shortly afterwards by his doctor. The doctor's attention was fixed on the diarrhœa, which was accompanied by some pain in the abdomen and fever. As the fever continued, he suspected that the disease was typhoid. He found by careful observation that two spots developed on his abdomen, and that, in his view, clinched the diagnosis of typhoid. Meanwhile the boy's leg was swelling, and when, after three weeks, an incision was made, and bare bone was found at the bottom of it; it was supposed to be a case of typhoid necrosis. In the fourth week the illness and abdominal pain subsided, as well as the diarrhœa, and they thus disappeared at a period which coincided very well with the ending of an ordinary attack of typhoid fever. So everything fitted in very nicely. But the pain in the leg, in spite of the subsidence of abdominal symptoms, got worse. The boy was utterly incapable of standing, his leg was a good deal

swollen, and he suffered a good deal of pain. He was therefore brought to the hospital. At that time he was looking very ill, wasted, and anæmic. He had a moderate degree of fever, 102°, on the night of admission, but it then came down, and remained down for some days. He had two sinuses over the upper end of the tibia, and a small abscess towards the lower end; this was opened at once. All were found to lead down to bare bone; it seemed that the upper two-thirds of the shaft had necrosed. As there was little fever, we thought we might wait for the separation of the sequestrum. But you will notice by the chart that, after a few days, his temperature went up from 101° to 103°, and became hectic, and at the same time we found the knee-joint filled with fluid. That is a matter of some gravity, because one is always afraid in cases of acute necrosis that the joints, into which the bone affected enters, may get involved. Therefore, directly he got this fever with swollen knee, I felt that I must do something to stop it. I put a syringe into the knee, and found only blood-stained fluid, no pus. I thought that if I removed the infected and dead bone this would subside. So, on the 18th February, I operated by cutting into the inner surface of the bone, from the sinus above to the opening below, and found the greater part of the shaft of the tibia lying in an imperfectly-drained abscess between the bone and periosteum. I removed the inner and outer surfaces of the tibia freely, and cleared out the whole medullary cavity. This was full of yellow and opaque marrow in the meshes of cancellous bone, which was present in unusual quantity; it seemed as if soaked with pus. At the upper end of this space the epiphysis was encroached on; there was a distinct cavity here, and there can be little doubt but that the suppurative process began at this spot. The danger was that infection might reach the knee-joint, to which it approached so closely that the joint was already inflamed, and the membrane was secreting fluid excessively. However, the trouble in the knee-joint subsided. We have been feeding the boy up, and dressing the wound by firm plugging with iodiform gauze; you see it granulating healthily over most of the surface. But you can still see a considerable piece of bare, yellow shaft, and this does not show any sign of loosening, though

the operation was done in February. The temperature fell gradually, and it is now almost constantly below 100°. Before I operated on him there was a trace of albumen in his urine. There is none now. The general condition is vastly improved.

This is an extremely typical case. We must always remember that typhoid symptoms often accompany this acute infective inflammation of bone, and one must be on the look out, so as to avoid taking a case in which the bone is acutely inflamed for one of typhoid. In this condition, the typhoid symptoms follow the bone trouble, and are dependent upon it. When necrosis occurs in connection with typhoid, it comes after, not during, the course of the fever. There has been recorded recently a case in which the person was not out of bed when the necrosis occurred, and I had a similar case in this hospital; but, as a very general rule, the patients are convalescent or nearly well when the bone abscess —in which the typhoid bacillus is found—appears. It has been said that typhoid necrosis has occurred as long as seven years after an attack of typhoid fever.

With regard to the ætiology of acute necrosis, it is due almost always to staphylococci; streptococci may be found, and it is said that mixed infections are more serious than simple ones. As a matter of fact, you can hardly get anything more serious than staphylococci alone can give rise to. The way in which these enter is usually by some abrasion of surface, some suppurating focus. Not uncommonly, though not by any means necessarily, there is a history of injury to the bone which is affected, and not of a serious kind. Acute infective osteomyelitis is practically unknown following such a lesion as fracture. But a blow on the tibia or exposure to wet and cold is quite enough to depress a certain part, and to enable micro-organisms, which happen to be in the blood, and which otherwise could not grow at that spot, to develop. The point at which this trouble probably begins is at the epiphysial line; perhaps some cases occur in the corresponding growing tissue under the periosteum, usually close to the epiphysis. Growth is going on most rapidly at the end of bones, and in the large blood-vessels here with a slow stream the pathogenic organisms lodge and find a favour-

able nidus. As soon as you get a case in which you suspect acute infective inflammation of the bone, you ought to incise immediately; there should be no question of delay, waiting for fluctuation, or anything of that sort. If a child or adolescent suddenly develops the signs of an acute inflammation of a bone, utter helplessness of the limb being a very characteristic symptom, much good may follow immediate treatment, which will prevent pus from burrowing and stripping up the periosteum widely.

It is well to extend the incision which you make, so as to examine the epithelial line, because the pus has probably escaped thence, and the focus should be drained. In these remarks I am assuming that you remember that acute necrosis occurs during the period of growth. Of course, there are some very acute cases of periostitis in adults, but I do not remember having ever seen a case in which the characteristic symptoms of acute infective osteomyelitis of the period of growth were reproduced.

Sometimes, with the symptoms I have mentioned, you find that the internal saphenous, or some superficial vein is thrombosed; and the same thing may happen in the deeper veins. These thrombi may become infected by the pyococci which have given rise to the acute inflammatory process in the bone. The thrombus softens as it spreads towards the centre; fresh clot is constantly laid down on the growing end, and often prevents bursting of the softening thrombus into the circulating blood. But, finally, the end of the thrombus may protrude into a vessel in which there is a fairly strong current; it is, perhaps, broken off, and infected thrombus, soaked with toxins, escapes into the circulation. The result will very likely be a rigor, and the formation of secondary abscesses similar to that in the bone; pyæmia may thus occur before the bone abscess has been opened. Septicæmia is easily explained. You see that, even now, in this case, although the bone is widely open and it is kept plugged tightly with iodoform gauze, there is a sufficient formation and absorption of toxins to cause some fever. Before the abscess was incised, or with imperfect drainage, the toxins are more freely formed, and are forced at higher pressure into the circulation. Hence the importance of clearing out and draining the medullary cavity; and any abscesses round about that bone.

A NEW EXPLANATION OF THE PRESYSTOLIC BRUIT.*

BY

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IN dealing with the origin of the presystolic bruit
it is first necessary to define the conditions under
which the work of the heart is carried on in pure
mitral stenosis. We have to start with a con-
striction of the mitral orifice sufficient to prevent
the left ventricle being filled with blood in the
normal manner. The smaller the orifice becomes
the greater the force required to fill the ventricle,
and the more marked becomes the difference of
the tensions on the two sides of the constriction;
in the left ventricle we have low tension, while in
the left auricle, the pulmonary blood-vessels, and
the right side of the heart we have high tension.
It is, I believe, generally accepted that an en-
gorged and hypertrophied ventricle has a slow
prolonged systole, and that an insufficiently filled
one has a short systole. In this disease both these
conditions are present, high intra-ventricular
tension on the right side and low tension on the
left. We should therefore expect to find a pro-
longed right ventricular systole and a shortened
left one, while the left diastole would be pro-
longed and the right shortened, the immediate re-
sult being non-synchronous action of the two sides
of the heart. A case recently seen by me illus-
trates this point. A. B., female æt. 35, suffering
from pure mitral stenosis, with a presystolic bruit
extending continuously backwards to the reduplica-
tion of the second sound. On palpation I found
by laying my finger along the fifth left intercostal
space, from the sternum to the apex-beat, I was
able to feel the systolic ventricular wave run
along my finger and end with the apex-beat. On
combining auscultation with palpation I found
that it occupied more than half the entire dias-
tolic period. I have noted this sign in other cases,
but in the one above quoted its character was
unmistakable; it did not in the least resemble the
undulation of a dilated heart, or the diffuse impulse

* Delivered before the Chelsea Clinical Society.

of dilatation with hypertrophy, but gave me the
impression of a regular wave of muscular contrac-
tion, spreading from the base to the apex and ter-
minating in the apex-beat. I am of opinion that
it was the base to apex portion of the right
ventricular systolic wave (1) which in consequence
of the existing abnormal conditions occurred
while the left ventricle was in diastole, the return
or apex to base portion of the wave being syn-
chronous with the left ventricular systole. The
causes of the first sound (2) being thus disasso-
ciated, the muscle vibrations of the right ventricle
become audible while the left ventricle is in diastole,
producing the crescendo character of the presys-
tolic bruit, and the intimate connection between
the auricular systolic bruit and the first sound.
The views of Drs. Barclay (3) and Dickinson (4)
that the presystolic murmur is caused by the early
part of the systole of the left ventricle were, I be-
lieve, founded on similar cases to the one I have
described. In the discussions that ensued the
weight of opinion was against their views, but
there are three points that do not appear to have
been satisfactorily answered by the supporters of
the " Gairdner " theory.

1st. To use Dr. Dickinson's own words,
" does the lifting of the chest wall as felt by the
finger indicate the systole?" (5) I believe what I
felt was the systole of the right ventricle, but
there was no evidence to prove that the left ven-
tricle was also in systole, and the fact that the
" lifting " commenced shortly after the reduplica-
tion of the second sound negatives the idea.

2nd. The absence, in some cases of double
mitral murmur, of an interval between the bruits
or any line of demarcation whatever. Cases have
been recorded where such an interval has been
said to exist, but that is not the question. I have
at present under treatment two cases with double
mitral murmurs, where the bruits are perfectly
continuous. Of course the tones are different,
but there is no first sound to be heard, or any in-
dication where one bruit ends and the other be-
gins. This seems to me to be best explained by
the introduction of a third element, such as the
vibrations of the acting first portion of the right
ventricular muscle.

3rd. The crescendo character of the presystolic
bruit and its intimate connection with the first
sound; this was especially dwelt on by Dr. F. C.

Turner. (6) In the normal heart the commencement of the auricular diastole "corresponds with the earliest part of the systolic rise of intra-ventricular pressure." (7) It is therefore difficult to account for these special presystolic characters by the "Gairdner" theory, unless there be an alteration in the normal cardiac rhythm. To meet this objection it is stated that the auricular systole may continue after the commencement of the contraction of the ventricular muscle, both auricle and ventricle continuing to contract simultaneously, until the moment when the sigmoid valves contract (8). Cardiograms being shown to support this statement, we are told that "the pen of the cardiograph is guided by the apex of the left ventricle," and that "the record of the auricular systole is written by an impulse communicated from the auricle to the ventricle" (9); but no attempt is made to prove this statement, or show from what part of the heart the tambour receives the impressions. Further, in the case of two cardiograms cited, no distinction is made between pure mitral stenosis in a girl aged seventeen, with a presystolic bruit occupying the whole diastole, and a woman aged thirty-four, with a double mitral murmur (10). My own post-mortem experiences lead me to believe that in the majority of cases of pure mitral stenosis, especially in adolescents, the left ventricle is not in contact with the chest wall, therefore the cardiograms taken from these cases only record the movements of the right side of the heart. In some cases the extreme apex of the left ventricle may be in contact with the chest wall, but the larger portion of the tambour must be over the right ventricle; consequently, before the cardiograms can be deemed to furnish accurate information of the movements of the left auricle, it must be proved that the systole of the right ventricle is synchronous with the systole of the left ventricle.

I cannot, therefore, but think that too much importance has been attached to cardiographic evidence (11), even if we take it at the fullest possible value, and discard Roy and Adams' researches (12). I therefore venture to make the following propositions:

1st. That in consequence of the different tensions existing in the right and left ventricles, these cavities under the circumstances of mitral constriction do not act synchronously.

2nd. That the base to apex portion of the right ventricular systolic wave occurs when the left ventricle is in diastole.

3rd. That the right ventricular muscle vibrations are heard during the diastolic period, and that they gradually increase in intensity towards the end of it.

4th. That the so-called presystolic bruit is composed of three parts:

(a) Right ventricular muscle vibrations.

(b) An auricular systolic bruit.

(c) A slapping first sound, the muscle vibrations being the cause of the peculiar and intimate relation between the bruit and that sound.

5th. That in the double mitral murmur these vibrations prevent the distinction between the two murmurs which is heard in the double aortic murmur.

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Microbes in Telephones.—Dr. H. W. Hill, of the bacteriological laboratory of the Boston Health Department, recently made an examination of thirteen public telephones in that city. In several of the transmitters harmless microbes were found, but inoculations of guinea-pigs failed to reveal the presence of any pathogenic microorganism. The report states, however, that this examination has demonstrated the possibility of infectious diseases, particularly diphtheria and tuberculosis, being conveyed from one user of the telephone to a subsequent user. Dr. Hill recommends the use of a liquid disinfectant. He also suggests that the receiver be cleaned and disinfected.—*Medical Record*, June 17th, 1899.

MEETING OF THE SOCIETY OF ANÆSTHETISTS,

At 20 Hanover Square,

Dr. DUDLEY BUXTON in the Chair.

DR. TURNEY read the following paper entitled "Post-anæsthetic Paralysis."

The subject to which I have to call your attention to-night is one which has attracted but little, if any, notice in this country, though it has been discussed to some extent in Germany. It is one which deserves your notice, partly on the score of its intrinsic interest, but mainly on account of its practical importance. This importance is, however, due not to the number of patients affected, or to the greatness of their sufferings, but to the fact that in the majority of cases, if not in all, these sufferings were unnecessary, and might have been avoided if the possibility and rationale of their occurrence had been known.

Post-anæsthetic palsies form a somewhat heterogeneous group, or collection of groups, which it is difficult to arrange in anything like logical order. It will probably be simpler to consider those paralyses which are of central origin first; they are very uncommon, are precisely similar to central lesions, which may occur under other conditions, and their connection with the anæsthetic is at the best but very indirect. They are therefore of very minor importance, from our point of view, and may conveniently be disposed of first.

Palsies of central origin.—The statement that these are in the main vascular in origin will excite no surprise. The circumstances which attend the administration of an anæsthetic are not uncommonly the most favourable possible for the occurrence of a vascular disaster, and the wonder is that these do not happen with greater frequency. As a matter of fact, they have been rare in the past, and are likely to become still more so in the future, as improved methods of producing anæsthesia become more widely known. The following are the more important lesions of this class which have been met with. .

(*a*) *Hæmorrhage.*—This has been known to occur, and it should be remembered that such an event may produce fatal shock, which in the absence of a thorough post-mortem examination, may be ascribed to the anæsthetic itself. It may be precipitated either by the arteral tension which results from struggling and excitement, the source of the blood being then arterial, or by the venous congestion of asphyxia, the oozing taking place from the cortical veins. I am not aware if, as a fact, this last condition has ever been proved to exist.

(*b*) *Ischæmic softening* has been described, particularly in cases of chloroform narcosis in aged people, or in those with highly atheromatous arteries. Nor does such an event appear improbable in the case of a brain which is already on a starvation allowance of blood, being deprived of more by the lowered tension produced by the absorption of chloroform. In its generalised form this lesion will appear clinically as fatal syncope, to which no further reference is necessary. As the cause of a focal disturbance it is undoubtedly seen, though fortunately but seldom, and on that account has almost escaped recognition. It has been taken for granted in this passing reference that these non-hæmorrhagic lesions are produced only indirectly by the action of the anæsthetic through its influence on the heart; but it is only fair to mention another possible explanation, which has been warmly supported by some foreign authors—that the failure in the nervous centres is the result of direct toxic action, and does not depend on alterations in blood supply. While such an hypothesis can hardly be dogmatically denied, it must be said that it does not commend itself very strongly to the judgment, and, so far as I am aware, there is no adequate evidence to support it. In the meanwhile, as the suggestion is incapable of either proof or disproof, it may be left to stand on its merits.

Functional affections occasionally take their start from the administration of an anæsthetic, the associated mental excitement being, as in the allied case of traumatic neurasthenia, the real efficient agent. The following are the notes of a case of this sort which came under my observation some few years ago:

A. P—, aged 30, married. For the past seven years patient has had trouble with her left breast, and during that time has had no less than six operations performed upon it. Immediately

after the last operation, which took place nine months ago, the patient found that she had lost all power and feeling in the left arm, and this condition has persisted with little or no change till the present time. In addition to this local trouble, patient has been unable to take solid food for nearly a year, on account of the pain that it causes, and even with fluid diet she is sometimes sick. On examination the patient is a sallow-complexioned but well-nourished woman. She is evidently of the highly neurotic type, and there is some ground for suspecting that the series of troubles referred to the left breast have had a purely nervous origin. The left upper extremity is completely motionless from and including the shoulder down to the hand. Slight flexion and extension movements of the fingers are still possible, but no other trace of motor power can be detected. The limb is, moreover, almost completely anæsthetic up to and including the shoulder, all forms of sensation being involved. According to patient's account, she can immerse her arm in the hottest water without experiencing anything beyond a slight sensation of pins and needles. The sense of position is very deficient, but is not completely lost. All the muscles of the affected limb react perfectly well to the faradic current; the degree of wasting is quite insignificant, and, indeed, its very existence is doubtful, except in the case of the deltoid.

It was quite clear that the symptoms were of functional origin, and treatment was at once begun on that assumption. The arm was vigorously faradised with the dry brush; at first, even with the full strength of a good-sized coil, the passage of the current was hardly realised at all, and there was not the least sensation of pain, but after a time sensibility began to return, particularly to the fingers. The patient was then put through a series of exercises, comprising all the simple movements at each articulation, and was instructed to continue them regularly till the next visit. Before her departure there was a very considerable return of power. From this time forth improvement was steady and fairly rapid, so that in six weeks patient was discharged completely cured.

The above is a good example of functional paralysis, and is particularly interesting on account of its remarkable similarity to certain cases of organic paralysis which may follow surgical anæsthesia, and with which I shall presently deal.

But I do not propose to detain you by detailing all the many cerebral lesions that may possibly occur in connection with anæsthesia, still less by quoting instances of them. Inasmuch as the spinal cord is practically exempt from these accidents, I will pass at once to the injuries involving peripheral nerves.

From our point of view, these are by far the most important of all, and of these there is one group which overshadows all the rest, both in interest and frequency of occurrence; this group is directly the handiwork of the anæsthetist, though he may act at the instigation of the surgeon. Its existence, I may say, at once depends on the nefarious practice of dragging the patient's arm or arms forcibly over his head, sometimes for convenience in feeling the pulse, but more often to get the limb out of the way of the operator. But, before discussing in detail the pathology of the affection, I will describe two cases of the sort which have come under my personal observation. I am, unfortunately, unable to make any definite statement as to the position of the patients during the progress of the operation, but I think that you will agree with me, when you have heard what I have to say on the subject, that there is no reasonable doubt as to the nature and cause of the symptoms.

The first of these cases came under my notice in the autumn of 1894. The patient was a single lady, aged thirty-eight. There is nothing of importance in her previous history, save that at the age of six she suffered from some affection of the left elbow, which had left that joint in a partially anchylosed condition. I mention this because this is the limb which was subsequently affected by paralysis. She was admitted to St. Thomas's Hospital on account of pelvic symptoms, and on October 26th oophorectomy was performed. The operation began at 2.14 and lasted till 4.20. The anæsthetic used was ether administered in a Clover's inhaler.

No difficulty seems to have occurred either with regard to the anæsthetic or the operation, but the patient, as soon as she came round, noticed that her left arm was powerless. At the same time she suffered a great deal of pain in that limb, which was partly a constant ache and partly of a sharp

radiating character. I was asked to see her a few days later. The observation was carried out somewhat under difficulties, as the patient, of course, could neither be turned over nor allowed to sit up so soon after the operation. Her condition was as follows. The left arm lay motionless on the bed. To the patient's most strenuous efforts to move the limb, the only response consisted in very slight flexion of the fingers. Motor power about the shoulder was completely lost, so far as could be ascertained, except as regards slight shrugging movements. There was no wasting, and the muscles did not feel flabby. They reacted to the faradic current nearly as well as their fellows on the opposite side. There was no ascertainable loss of sensation, and the only sensory change noticed by the patient consisted in some transient paræsthesia about the tips of the fingers. Neither nerve-trunks nor muscles were tender on palpation. There were no pupillary symptoms, and no sign of nervous disease elsewhere. The patient was a clear-headed, intellectual woman, and was able to give a good account of her sensations. Alcohol and other toxic influences could be absolutely excluded. Unfortunately, this proved to be my only examination of the patient, but I am able to supplement the account to some extent. Under treatment with faradism some improvement set in, but it was slight. When the patient was discharged, on December 8th, there was some recovery as regards the forearm and fingers, but none as regards the upper arm and shoulder. I may as well confess, in passing, that at the time I took this to be a case of functional disease, and that it was only when I thought it over that I came to the conclusion that there must be organic change. I could not see at that time how it should be possible for the whole arm to be paralysed up to the shoulder in that complete way without any involvement of sensation, except on the assumption of a functional disorder. The time which had elapsed since the occurrence of the lesion was too short for the electrical reactions to be of much use for diagnosis. On May 7th, of 1895, I wrote to the patient, and quote from her reply, which was written a little more than six months after the operation. She says: " I am pleased to say that my arm is very much better, although not, as you surmise, quite recovered. My greatest difficulty

is in lifting things up; for instance, I can carry a teapot or jug of water easily by keeping it down by my side, but were I to attempt carrying it upstairs, and raised upwards, I should fail. In using my knife and fork, I am obliged to assist the left hand with the right. The weakness seems to be centred in the shoulder, down to the elbow; after that I have the full use of my arm, hand, and fingers." I heard from the patient about a month ago; in her letter she states that her arm, though very much better, is still a weak member as compared with the other. Though there is no actual paralysis, it very soon gets tired.

I have gone into this case with some detail, because it illustrates the great severity and persistence of some of these palsies. I will now proceed to narrate another similar case, which I saw quite recently. It is of precisely the same nature, and I need only give it in outline.

H. R—, aged 20, was seen on the 5th of January of this year, when he gave the following history. On August 3rd, 1898, he was placed under an anæsthetic (apparently chloroform) for the opening of an abscess which had formed in his right axilla, in consequence of a poisoned wound of the thumb. He stated that he was under the anæsthetic for three-quarters of an hour, but, considering the size of the scar and the nature of the operation, this is probably an exaggeration. The arm was then kept bandaged to the side for a month. The bandage was of ordinary soft material, and does not seem to have been applied tightly; at all events the patient had no pain, and the hand did not swell or get blue. When he first tried to use the limb he found himself unable to move the upper arm from the side or to flex the forearm, but he could move his fingers quite well. There was no affection of sensation at any time.

On examination, there is a small linear scar, about an inch and a half long, in the right anterior axillary fold—the only sign of the seat of the abscess. Passive movements are free in all directions and are carried out without pain. All power of abducting the upper arm from the side is lost, and flexion of the forearm is markedly weak. The right deltoid and the clavicular part of the pectoral are extremely wasted; in the supra-spinatus and infra-spinatus the change is not quite so well

marked, while in the biceps and supinator longus the atrophy, though definite, is comparatively slight. The reaction of degeneration is complete in the deltoid, but only partial in the spinati muscles, while the supinator longus shows no change. The patient was not seen again, but there can be little doubt that recovery would eventually take place, though probably only after a considerable lapse of time.

It may possibly be suggested that the paralysis here was due either to the prolonged disuse or to pressure on the nerves exerted by the bandages. But the electrical reactions show positively that the condition of the muscles is due to interference with their nerve supply and not to disuse alone, while the implication of the spinatus muscles cannot possibly be accounted for by the pressure of a bandage.

These two cases together afford a very good illustration of the two main clinical varieties of post-anæsthetic palsy. In the one just described the symptoms are those which we know to be produced by a lesion of the fifth and sixth cervical nerve-roots. I may remind you that the muscles involved in such an injury are the following—the deltoid, the clavicular part of the pectoralis major, the brachialis anticus and biceps, the supinator longus, and not infrequently the supra- and infraspinatus,—all of them acting on either the shoulder or the elbow-joint. With the one exception, that the supinator longus has to a great extent recovered, the condition of the second patient exactly corresponds to this symptom-complex, which was first described by Erb and still goes by his name. In the first case, on the other hand, the condition has quite a different clinical aspect at first; the whole brachial plexus is involved, though the slight remnant of power left to the fingers shows that the lower roots are less severely affected than the upper, and in a few months' time this is still more evident, for it is clear, by the patient's description, that the only muscles still affected are those forming the Erb group. An Erb's palsy then, or, in other words, a lesion of the fifth and sixth cervical roots, may be looked upon as the irreducible minimum or common denominator of the various types which present themselves under the circumstances which we are now considering.

The exact spot at which injury of the nerves will produce this effect is at a point just behind the posterior border of the sterno-mastoid, and about an inch above the clavicle. It is here that the fifth and sixth roots combine as they lie between the scalene muscles, and it is here that (as Erb shows) electrical stimulation will throw into action the muscles which have already been enumerated. The exact seat of the lesion being known, the means by which the injury is produced is the next question for consideration. It is well known that the commonest clinical cause of Erb's palsy is a forcible elevation of the arm above the head, as, for example, when a patient is dragged upstairs by the arm while in an intoxicated condition, or when a child is lifted by the arm out of its perambulator by a careless nurse. In another group of cases, it is true, the paralysis follows a fall upon the shoulder, when the arm is forced down instead of up, but into the causes of this apparent discrepancy it is not necessary to enter. There are the strongest reasons for ascribing to that special variety of Erb's palsy, which is known as post-anæsthetic paralysis, the same method of production, i. e. elevation of the arm. In the large majority of recorded cases there is distinct evidence that during the operation the patient's arm or arms were dragged over the head, and in some instances where the evidence of this manœuvre is clearest, the resulting paralysis was bilateral. In the second place, practically all the cases have occurred after operations, either on the chest or abdomen, when, of course, the arms would most certainly be carried over the head to keep them out of the way. You will observe that in both the cases which I have mentioned to-night this fact applies. It may, then, be taken as practically certain that in some way or other it is the extension of the arm that is immediately responsible for the damage to the nerves. How does this act? There is no doubt that it acts by bringing about a compression of the nerve cords as they lie on either the scalene or the first rib, and there is no doubt either that the compressing agent is the clavicle. It would take too long to wander off into the tempting subject of the mechanism of the shoulder-joint, but a few words must be said to explain this fact.

When the arm is hanging in a position of rest, by the side, there is a fair space between the slanting upper surface of the first rib and the lower

aspect of the clavicle, the cords of the brachial plexus being just free from pressure; still, the space is so slight that a very little change in the relations of the two bones will expose the nervous structures to very severe pressure. When the shoulders are raised, as in the act of shrugging, the clavicle rises considerably, and the space between it and the rib is increased. When the arm is raised in a forward direction, or forwards and inwards, to a moderate extent (say, not above the horizontal), the position of the clavicle is but very slightly altered, the movement being effected partly at the shoulder-joint, and in the later stage partly by a swinging of the scapula. On the other hand, when the arm is raised laterally, and still more so when the movement is in a backward as well as an upward direction, the clavicle executes a very considerable excursion, and this not in an upward sense, as might be expected, but so as to move its outer end both backwards and inwards, a manœuvre which causes the whole bone to lie in an almost antero-posterior position. In doing this the clavicle slides backwards and very slightly upwards over the upper surface of the first rib, and at the end of the movement also rotates slightly on its own axis from before backwards, so as to bring its upper and posterior border on to a slightly lower level. As a result of this combined movement the clavicle and rib are forced into the closest apposition, and the nerve trunks are compressed between the two. The danger is increased if the head be bent either backwards or to the opposite side, as by this means the nerve-cords are put on the stretch and cannot slip away as they should do normally. If the elevation of the arm be extreme, and especially if it be a movement backwards as well as upwards, the clavicle may even be forced back on the scalenes beyond the rib, and may injure the nerves as they lie in contact with those muscles. It has been argued that the compression may occur between the clavicle and the transverse processes of the sixth and seventh cervical vertebræ, but it is very doubtful if this ever happens in a normally-built subject. It has also been argued that the paralysis may be due to the stretching of the nerves over the head of the humerus when the arm is in a strongly abducted position. This may account for some of the cases of ulnar and median paralysis, but it is clearly impossible for an Erb's palsy to be pro-

duced in this way, for the nerves concerned do not enter the axilla at all.

The forms of paralysis, then, that may be produced in this way may be classified as follows :—

(a) *Erb's Palsy.*—Brachialis anticus and biceps, deltoid and supinator longus, with sometimes the spinati. Caused by pressure between clavicle and rib, or in the latter case possibly (involvement of spinati) between clavicle and scalene muscle.

(b) Total lesion of brachial plexus, including all the muscles of the shoulder girdle. In this case the fifth and sixth roots are compressed between rib and clavicle, while the seventh, eighth, and first dorsal may either suffer at the same spot (and this is the more probable), or they may be injured by being stretched over the head of the humerus as it descends into the axilla during abduction of the arm. In several of these cases there have been pupillary symptoms pointing to a lesion of the first dorsal root at a point much nearer to its origin than either of those just considered. It has been suggested by Budinger that in these cases, in consequence of the abduction of the arm, there is an element of traction which acts on the nerve-root at its exit from the spinal canal. An ascending neuritis has also been proposed, but the sign has been seen at too early a stage for this to be a possible explanation.

(c) Paralysis of one or both serratus magnus muscles, with or without Erb's palsy. The pressure on the long thoracic nerves in this case is probably as they lie on the scalene muscle and before they come into relation with the rib. A case shown by Dr. Cayley at the Clinical Society last year is in all probability an example of this type. (See ' Clin. Soc. Trans.,' vol. xxxi, p. 299.) Both serrati and one infra-spinatus muscle were paralysed after resection of ribs for double empyema. A precisely similar case, so far as the distribution of paralysis is concerned, was reported in the ' Deutsche med. Woch.' last year. The patient was a soldier, inexperienced in gymnastics, who was kept hanging by his arms from a trapeze without the power to raise himself up. Immediately afterwards he found both arms paralysed as above described.

The prophylaxis against these unfortunate occurrences is clear. The patient's arm must not be dragged up over his head; if, however, this is absolutely necessary, then the following precau-

tions should be taken. The arm should be raised as much as possible in a forward direction. The head should be supported on a pillow, and, if possible, inclined to the side on which the arm is elevated. It should be remembered that these casualties nearly always occur after operations on either the chest or abdomen, the reason for which is obvious. It is my personal belief that in a minor degree such results are far from uncommon. As a rule they pass off in a few days, and are then ascribed to tight bandaging or to lying on the limb. Though they nearly always end in recovery, still that does not always follow, and, as we have seen, it may be very long delayed. In a particularly sad case, reported by Budinger, both arms were completely paralysed after an abdominal operation, and remained so till death.

The other forms of post-anæsthetic paralysis which remain to be considered are of purely subordinate importance, and should perhaps be regarded as the appanage of the surgeon rather than of the anæsthetist. The first to which I shall refer is paralysis of a single peripheral nerve (most commonly the musculo-spiral) from the limb being doubled under the body; it is, in fact, identical with the palsy which is so often seen after a drunken sleep. I will mention one typical instance of this and then pass on.

W. D——, a strongly-built man, aged 50. Two months ago he was operated on for malignant disease of the left parotid gland. During the operation, which was of some duration, he lay upon his right side, and when he came round from the anæsthetic he found that he was unable to move the right arm. Since then he has been improving gradually, but is still far from recovered. On examination the right forearm is distinctly wasted and the muscles are very flabby. The muscles affected are the supinator longus and the common extensors. These are weak, but not actually paralysed. The muscles mentioned show a reduction of irritability to both currents, but no true reaction of degeneration. The patient did not attend again, but no doubt he recovered. It is clear from this account that there had been paralysis of the musculo-spiral nerve from pressure at the usual spot, that is, where it curves round the humerus. The triceps is unaffected, and the supinator longus involved, two facts which are ficient for the localisation.

That is the only case of the sort that has come under my notice, and I should say that it is distinctly uncommon.

On the other hand, pressure against the corner or edge of the operating-table is not so infrequent; at all events, I know myself of several cases. Either the ulnar nerve or the musculo-spiral may suffer. The following are the notes of a case which Mr. Clutton has kindly placed at my disposal.

B——, aged 30. A long operation was performed for removal of a portion of epididymis for tubercle. A dissection into the inguinal canal in order to take away as much of the vas deferens as possible was found necessary, and finally castration was performed. During the same anæsthesia, after the above operation was finished, the palmar fascia of the left hand was divided in many places for the relief of Dupuytren's contraction. During the whole of this time the right arm was hanging over the edge of a narrow deal table. On the following day it was noted that the right arm had been exceedingly painful from the time that the patient recovered consciousness. There was then (twenty-four hours after the operation) intense hyperæsthesia, with paralysis in the territory of the right ulnar, starting from a point about two inches above the elbow-joint. This was undoubtedly due to pressure against the edge of the table. A month later the paralysis was rapidly passing off, and a month or two later still the patient's only complaint was that his little finger "stuck out."

Hitherto all the forms of paralysis described have been limited to the upper extremity. I will now mention one that has been found in the lower limb, and which forms a class by itself. It is perhaps, so far as causation is concerned, more akin to the Erb group than any other. I refer to paralysis of the anterior crural muscles following anæsthesia, in the lithotomy position. The explanation is no doubt to be found in compression of the nerve between the thigh and the abdomen. I know of one case only in which this condition is recorded.

There is another form of paralysis from compression, which it is perhaps hardly fair to mention in this connection, as it is of purely surgical origin. I refer to the injuries which follow the use of the tourniquet for exsanguinating the limb.

This practice seems to have become almost extinct during the past few years, and so the subject has lost the importance which it undoubtedly had then. In some cases the resulting paralysis was of the severest and most intractable description. With this slight mention the subject may be left to the surgeon whom it mainly concerns.

The last paralytic sequela of induced anæsthesia, which I propose to bring before your notice to-night, is rather curious than important, and I am not aware that it has ever been noticed before. I am indebted to Dr. E. Ware for the use of the case.

N. R——, aged 50. Three months ago the patient submitted to an operation for the relief of varicose veins in the leg. He took the anæsthetic very badly, and, as his condition excited alarm, he was given a hypodermic injection of ether in the left forearm. The injection was made about half-way down the limb on the extensor surface. The next day there was a slight swelling over the spot, but this rapidly subsided, and it was then noticed that the index finger was paralysed. Since then the condition has remained precisely the same.

On examination, the general nutrition is found to be good. There is no suspicion of alcohol, and no sign of visceral disease. The left index finger is held in a semi-flexed position at all joints, and no sign of any movement of extension can be produced by the strongest efforts on the part of the patient. If, however, the first phalanx be supported, the two distal ones can be extended readily. There is no change in the contour of the forearm. The extensor indicis muscle shows the full reaction of degeneration,—a very sluggish contraction, with loss of faradic irritability, but no serial change with the galvanic current. Passive movements are perfectly free and unaccompanied by pain. There is no tenderness of nerve or muscle.

There can be no doubt here that the nerve to the extensor indicis muscle has been injured either by the actual point of the syringe or by the irritant effect of ether injected into its neighbourhood. The chances seem to be in favour of the actual division of the nerve filament by the point of the needle. It is now three months since the accident; there is as yet no sign of improvement, and, to say the least, it is very doubtful

if any can now be expected. Everything therefore points in the direction of complete division of the nerve, and not mere irritation of it. The worst of it is that any attempt to reunite the divided strands by operative measures would almost certainly be unsuccessful, and I consider that even the attempt would be unjustifiable.

My object in calling your attention to the various forms of paralysis which are attendant upon surgical anæsthesia, has been not only to excite your interest, but to secure your aid in removing, at all events, some of them from the list of what may be called either post-operative or post-anæsthetic dangers.

Acute Diffuse Gonococcus Peritonitis.—
Dr. Cushing concludes an important communication to the 'Johns Hopkins Hospital Bulletin,' May, 1899, on the above subject as follows:

The gonococcus has made a place for itself as one of the most important pathogenic bacteria. Few organisms, not even the *Bacillus typhosus*, rival it in the number of suppurative sequelæ which may follow a primary infection. Its occurrence in the conjunctiva, and in the iris, the joints, bursæ and tendon-sheaths; its occasional demonstration as the cause of endo- and pericarditis, pleuritis and phlebitis, and the recent observations of cases of pure septicæmia with its cultivation from the blood shows that its possibilities for metastatic complications are as numerous as are those arising from the spread of infection by direct continuity of surfaces. A general peritoneal involvement by direct extension of an unmixed gonorrhœal process, though long considered among these possibilities has heretofore remained unproven. It adds another variety to the peritonitides of mono-infection which are rare except when of hæmatogenous origin.

CONCLUSIONS.

1. The gonococcus is capable of causing a specific infectious disease, namely, gonorrhœa, and at the same time other and less specific pathological conditions.

2. There is experimental proof that in certain small animals the gonococcus can set up acute alterations in the peritoneum homologous with the acute septic serositides in man, but differing from

these in their tendency to rapid and spontaneous healing. Hitherto there has been wanting conclusive proof that in the peritonitides attendant upon gonorrhœa occurring in women the gonococcus was solely or chiefly concerned. The inflammations had been variously regarded as mixed infections and chemical inflammations.

4. The cases reported in this paper bring for the first time convincing evidence of the existence of a diffuse, general inflammation of the abdominal cavity caused by the gonococcus.

5. It has been recognised that extension of the gonorrhœal infection from the genital organs to the peritoneum may occur in the puerperal state; a similar sequel is shown to be possible during menstruation.

6. Such ascending forms of gonorrhœa doubtless under ordinary circumstances remain localised in the pelvis, and rarely demand surgical investigation in the acute stage.

7. A general involvement of the peritoneum such as occurred in the two cases given, must either be rare or unrecognised, and may depend upon some especially receptive condition of the serosa or virulence of the organism.

8. The peritoneum is not·more immune than are the peri- or endocardium to gonococcal infection, and being more exposed, suffers more commonly in females, although the relatively benign course of the disease makes it a rare condition to come to the attention of the surgeon in the acute stages.

On General and Local Bloodletting in Pediatrics.—Baginsky ('Berlin. klin. Wochenschrift,' 1898, xxxv, p. 457) reports a case in pediatric practice in which venesection undoubtedly saved life. The patient, a seven-year-old girl, with acute lobular pneumonia (complicating measles), was almost at the lethal point from exhaustion accompanying dyspnœa. The child was cyanosed and pulseless, with loud tracheal râles. As depletion could not be effected by venesection, the left radial artery was opened and 80 c.c. blood were abstracted. Cyanosis and dyspnœa were relieved and the pulse returned, with a general rally. The further history of the case was uneventful. In this case the abstraction of blood relieved the acute dilatation of the heart. Venesection under these circumstances is comparable in its results with the operations of tracheotomy and intubation. Baginsky also reports similar cases

of life-saving in connection with venesection, performed in heart disease with disturbance of compensation, and in dyspnœic crises associated with bronchoectasis and suffocative asthma. At the same time cases may be met in which bloodletting may fill the mechanical indication, and the patient may nevertheless die of toxemia.

With regard to local bloodletting in children, Baginsky knows of but two conditions in which it is indicated, viz. simple convulsions and uræmic eclampsia. The indication is filled by the use of leeches. Simple convulsions usually yield to simple remedies, such as warm baths with affusions, bromides, chloral, chloroform, ice, &c.; at times, however, all these remedies fail. In the course of numerous autopsies performed on children who have died with convulsions, Baginsky has found marked active or passive congestion of the brain; and he therefore feels justified, whenever ordinary measures fail, in employing this mechanical measure. This reason applies with even greater force to uræmic convulsions, for in nephritis the arterial pressure is raised, and the blood hydræmic and loaded with toxic material. In cases of this sort leeches to the head are often productive of strikingly beneficial results. Baginsky relates the example of a child with deep uræmic coma and Cheyne-Stokes breathing, cyanosis, no pulse, &c., with fearful convulsions, in which six leeches to the head first produced cessation of the convulsions and later return of consciousness and ultimate recovery.—*Pediatrics*, June, 1899.

The X Rays in Thoracic Diagnosis.—The increasing efficiency of the X rays in medical diagnosis is beautifully illustrated by an article on "Some of the Medical Uses of the Röntgen Light," by Dr. Francis H. Williams, of Boston, published in the 'American Journal of the Medical Sciences' for June. A series of six unusually clear skiagraphs is reproduced, representing the normal thorax in full inspiration, pleurisy with extensive effusion, pleurisy with slight effusion, pneumonia in the seventh day of the disease, pulmonary tuberculosis, and passive congestion or œdema of the lungs. The aid rendered to clinical examination by these remarkably clear pictures is very great, the outlines of the heart, the trachea, the œsophagus, the visible part of the aortic arch, the ribs, and the clavicle showing in marked contrast to the clear space of the normal lungs. The diseased portions of the lungs in the various pictures also show up well. These illustrations are among the best we have seen, and are convincing proof that it is only a question of time ere a large part of the field of medical pathology will lie as open to visual examination as is that of surgical pathology.—*N. Y. Med. Journ.*

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*Specially reported for the Clinical Journal. Revised
by the Author.

NOTICE.

A LECTURE ON GENERAL PARA-
LYSIS OF THE INSANE.

Delivered at the Bethlem Hospital, Southwark,
June 6th, 1899.

By G. H. SAVAGE, M.D.

GENTLEMEN,—To-day we will first see a patient,
and then consider the symptoms which we find he
presents. This patient is able to tell us that he
came here on the 28th March, and that the pre-
sent day is June 6th. Asked if he has ever had any
illness, he tells us he has had nearly every disease.
He says he suffered when young from bronchitis,
his first wife died of galloping consumption, and
after her death he contracted syphilis. He lost his
hair, but had no severe headache and no par-
ticular tenderness about the head. He took mer-
cury for three years, so he tells us. He has
never had any nervous breakdown before this.
He came here because he became depressed and
then sleepless, but he had no headache. Tears
come readily. He is employed in a German
bank. His age is thirty-two, and he entered the
bank sixteen years ago. His pupils are slightly
unequal, and that, he says, is why he went to
Moorfields Hospital. The pupils now react to
light and also to accommodation. He perspires
very freely. There is very slight labial tremor,
and very slight, if any, defect of expression. There
was no complaint of his writing at the bank. His
knee-jerks are brisk. Here, then, is a history of
overwork and depression, followed by a feeling of
buoyancy, of intense muscular, moral, intellectual,
and social strength—he feels, in fact, " fit for any-
thing." He is now very anxious to get back to
work, and has a tendency to write many letters.

Now in speaking of general paralysis of the
insane the first thing necessary is to define it.
But I am afraid I am in the same difficulty that
the present head of Bethlem Hospital was in
when he wrote a paper denying the existence of
general paralysis as a special disease. But I must

begin by saying that general paralysis of the insane is at least a well-recognised group of symptoms, which seem definite enough when the types observed are simple.

In the early part of the century, both in England and in France, it was noticed that there were a certain number of patients admitted into asylums who, in the majority of cases, were very excited, were extremely buoyant; everything from their point of view was as bright as bright could be; they were the strongest of men, had got power to do anything; whether you suggested that they should grow oranges or preach the Gospel it was all the same to them; they would win the Derby or act as Lord Chief Justices. These people were noticed later to pass into a condition of weakness of mind and feebleness of body. Then it was noticed they very frequently had fits, and they all died within two or three years. It was next discovered, post mortem, that there were certain definite brain changes; that there were adhesions present between the membranes and the cortex of the brain; in fact, that there was a kind of parallel between Bright's disease and general paralysis. It was noticed at Guy's Hospital by Bright that a certain number of patients who had albumen in the urine, had some evidence of old inflammation about the kidney. So that while the most characteristic symptom was albuminuria, the common post-mortem sign was the presence of adhesions between the cortex and the membrane. We have, of course, now got to know that albumen occurs in many conditions of kidney other than what was originally called the classical form of Bright's disease, and now with advancing knowledge we have come to recognise that there are an enormous number of cases of brain degeneration that do not run the course that I have sketched. But yet there are a sufficient number of cases that end fatally at the end of two or three years, in whom there have been very similar histories. The following is almost a typically good case. First of all he is a young middle-aged man, a well-built fellow; next there is a distinct history of syphilis; next a distinct history that he did not suffer very seriously from constitutional symptoms of syphilis. Brain syphilis occurs most frequently in patients who have not had severe sore throat who have not had severe trouble about the skin, who have

not had many nodes, and who have not lost their hair. Thus we get in general paralysis of the insane almost always a history of syphilis occurring in an otherwise strong middle-aged man. As a rule the patients are rather older than the one we have been examining. I have at the present moment two or three cases under observation who contracted syphilis very prematurely. In one case an Eton lad managed to get syphilis when between sixteen and seventeen, and he developed general paralysis of the insane before he was twenty-five, which was not very extraordinary under the circumstances. As a rule, general paralysis of the insane, which is so frequently related to syphilis, comes on from ten to twenty years after the attack of syphilis. It is not universally the case that such a long interval takes place. Another patient, whom I have seen occasionally, first showed symptoms of general paralysis about three years after the syphilitic infection.

Now to take up the case and analyse it. The man is thirty-one, he is married, indeed he has been married twice. The majority of cases of general paralysis occur in married men. It used to be said, and is still, by Dr. Maudsley, that marriage and sexual excess go together. I do not think this is true. Next he says that the majority of cases of general paralysis depend upon sexual excess. Again I say I do not believe it. As in many cases, the early symptoms and the cause have to be clearly separated. Not infrequently the general paralytic, before he breaks down, in the early stage of excitement, becomes extremely lustful; in the same way among many of these cases you get intemperance as one of the earliest symptoms. But it is not the drink which produces the general paralysis, it is the general paralysis which produces the lust and the drink. Here, I say, is a married man who has lived by his brains. General paralysis of the insane undoubtedly occurs more in cities than in the country, more among active brain workers than among mere hewers of wood and drawers of water. Undoubtedly general paralysis of the insane is a disease associated with high living, with living in the city, with indulgence in a good deal of meat, a fair amount of alcohol, and in sexual indulgence as well. Some would say that a man who is living by his brains will exhibit little sexual indulgence excess. That is true, and excess alone is not

enough, in my opinion, to produce general paralysis. One sees Orientals who have many wives do not suffer from general paralysis at all commonly, unless there is syphilis in addition, and of course among the majority of these Orientals who have many wives there is comparatively little meat eaten. So that in these people, though it may be assumed there is or may be a good deal of sexual excess, there are not the other conditions,—the living so much in cities and living an excited life and taking meat in considerable quantities. This man we have seen has been rather intemperate, but whether that is the result of the general paralysis or not one has not got evidence. A paternal aunt, we learn, died in an asylum four years ago, and his mother is said to have been hysterical. Another thing to remember is that general paralysis of the insane occurs more frequently in people who are not of the neurotic type. If you take all patients in Bethlem Hospital you will find that 30 or 40 per cent. of them have insane blood relations, that is to say, over one third. But if you take 100 cases of general paralysis of the insane in asylums or in private practice, whereever you are, you will find only about 10 per cent. of those are neurotic or have blood relations insane. So that general paralysis has to be looked upon as a disease that occurs more frequently in those who are not neurotic than those who are. If, therefore, I were asked to say what I believe general paralysis to depend on, I would say, first civilisation in a high degree, city dwelling, high living, stimulating food, continuous severe strain and brain work in a syphilitic subject. I have sometimes felt inclined to call it the disease of the Stock Exchange. I see a large number of these patients, but always with the same history; they have worked hard, they have lived very hard, and they have, in their early years, contracted syphilis. In my experience, nearly 80 per cent. of the cases of general paralysis have had syphilis undoubtedly. Remember that general paralysis of the insane is more common among men than among women. It used to be said that no lady had general paralysis. I suppose it used to be said that no lady ever had syphilis; but I am afraid neither is true now. But the cases of general paralysis which I see in women are all in "women with a past," and the general history is that the husband does not know very much about the errors of his wife.

Then one begins to suspect the condition of affairs, and does not ask the husband many direct questions. In the same way, in asylums, comparatively few females subject to general paralysis are admitted, and very few into Bethlem, because there is the social distinction which would prevent the entrance as a free patient, and hardly as a paying patient, a woman with a very distinct past. One has also pointed out that if women will insist on having the rights of men they will also have their wrongs. If they lead the more general mixed life they will run a greater risk probably of syphilis, and they will certainly run a greater risk of other causes of general paralysis, such as work. And with the increase of women's rights you will get an increase of general paralysis. Although, as I told you, 80 per cent. of the cases depend upon syphilis, there are over 20 per cent. to be accounted for. A certain proportion of these may have had syphilis, or may have inherited syphilis. A certain number of cases depend upon parental syphilis. In Bethlem Hospital I remember some years ago two patients, father and son. The father had had syphilis before the son was born, and the son also had general paralysis, both depending on the same thing. At the present moment I have under my distant observation a husband and a wife, the husband formerly a more or less distinguished man in the political world. He begat a healthy family, but during his political duties he contracted syphilis and communicated it to his wife. Both husband and wife are at the present moment suffering from general paralysis of the insane.

Now although syphilis is a general cause it is not a universal one. Years ago there were two patients, one in Bethlem Hospital, the other in Edinburgh, twin brothers, suffering from general paralysis. Both died of general paralysis, one in London and the other in Edinburgh. In both the disease started about the same time, and they both died within a short time of each other. One of them distinctly had had syphilis, and the other equally distinctly had not, but he had had a great deal of worry and anxiety; the worry and anxiety that prevents healthy sleep, and therefore prevents the healthy repair of nervous tissue, will lead to general paralysis of the insane. Remember that besides the mere predisposing causes to which I have referred,—civilization, syphilis, and the like,—

you have to have an actuating cause as well. Remember that there are thousands and tens of thousands of men who have constitutional syphilis who never have general paralysis, although 80 per cent. of my general paralytics have had syphilis. If you take a thousand persons the subjects of constitutional syphilis, a very small proportion would have general paralysis. That is a thing to be carefully borne in mind—that the vast majority of people who have had syphilis do not show any brain degeneration, notwithstanding that one has to remember that there is a definite relationship. One of my favourite quotations is, " and then we get ripe and ripe and then we rot and rot." I say that a syphilitic brain, or a brain that has been damaged by lead, or a brain that has been damaged by malaria, and certain brains—not very many—which have been damaged by alcohol, are rendered ripe unto rottenness; you merely want a shock and then degeneration is started. You may have a fine pear, absolutely ripe, and it may go on hanging for a long time without rotting; but pinch it and see whether it is ripe, and in a few days, in the two places where you pinched, degeneration begins. Knock it, and at the place where it was struck degeneration takes place. So that very many cases of general paralysis are said to depend upon traumatism or injury. As a matter of fact, they were ripe unto rottenness, and then came the injury. Take as an example the young military officer in one of the recent campaigns who received a blow on the head from a spent bullet. He simply put up his hand, reeled and fell, was insensible for a second or two, then got up in a dazed condition and did not think there was very much the matter. He was taken back to camp on an ambulance, and from that time he was not quite the same as before. When he was sent home to England it was thought that the climate had upset him. Probably it had something to do with it, but the syphilis had more to do with it. The syphilis had so prepared him that when he received the blow on the head the complaint went on and the man died of general paralysis. Another man was riding near a Midland town when his horse stumbled and he fell and struck his head, not very severely, against the buttress of a bridge. From that time he complained of being dazed and confused and " not himself." It was a case of general paralysis of

the insane. So that in the majority of cases when there has been a predisposition to general paralysis in consequence of the mode of life, syphilis and the rest, a shock—it may be a blow or it may be a moral shock—starts the general paralysis. Take one of those cases. A man finds that he has infected his wife with syphilis. That is a moral shock, quite as severe as a blow on the head, and it is the starting-point of general paralysis. Or a man suddenly loses all his money, and that is enough to upset him and start the general paralysis.

Now let us proceed further with the history of this case. Five days before admission he was in bed for nearly a week with influenza. That also is an important point. Influenza may be the actuating or starting point of general paralysis. When influenza had just begun as an epidemic I saw one very marked case in a man holding a rather important position in the post office. It was noticed that he was a little bit heavy and dull and sleepy, but nothing more. Before, he was an active managing man, but now he was dull. After that he got a severe attack of influenza, and I was asked to see him. He went into the attack of influenza with no physical symptoms, and no general paralysis had been noticed. Within a few weeks I saw him, and he had unequal pupils, with grave defect in speech, tremor about the lips and tongue, with loss of expression, like that of a man trying to talk with his cheeks blown out, and a silly aspect generally; he was also forgetful, dull and sleepy, and weak-minded. That man in a very short time passed into a state of dementia; he went rapidly through the early stages of general paralysis and passed into the stage of profound weak-mindedness; then he had fits and died. All followed upon the attack of influenza, the man being " ripe unto rottenness."

General paralysis, as a rule, gives warning, and very very long warning; only, like in so many other conditions, you recognise the warning when you are on the rocks. You recognise then that you did not notice the foghorn sooner, or that you mistook it for something else. And so in your future relationship with general paralytics, in nine cases out of ten you will be wise after the event and when it is too late. When a man is brought to me with typical general paralysis, one

asks the friends if they have noticed this or that? And the friends begin to think and say "yes," but that they did not think much of it. Now what are the warnings? First of all, the best way, perhaps, is to repeat what Sir Samuel Wilks said many years ago, "if you wish to know what the early symptoms of general paralysis may be, watch your friends at a public dinner." One of them towards the end of the dinner becomes very brotherly and emotional. Another becomes boastful and pugnacious. · Another becomes inclined to be filthy, obscene, or blasphemous. Another becomes simply garrulous, chattering so that you cannot stop him. Another becomes a fool in many respects, while another still more distinctly a fool, sits hopelessly drunk and hopelessly indifferent to his surroundings, possibly wetting himself, and probably later on vomiting. These are extreme cases, but such are the symptoms of progressive mental dissolution due to alcohol.

These, too, are symptoms which may occur early in general paralysis of the insane. There is the loss of higher control, and according to the man's status, his age, his education, and his temperament, so will the form of these symptoms be determined. A certain number become irritable. One of the most characteristic symptoms of our patient who has just left was that he burst into tears directly one spoke to him. There was no reason for this; such emotional weakness is very common. In the early stages of general paralysis emotional weakness and hysteria are very common indeed. Therefore, if I am called to see a male patient of middle age who is distinctly hysterical, I look out for general paralysis of the insane, and I seek the physical symptoms of that disorder. General paralysis may show itself on the physical side most, or on the mental side most. Wilks, again, used to object sometimes, when he came round with me here, to what he called one's prophetic diagnosis. He said, "I come into your wards and I see a man jump over a chair and go and play racquets, the most active man in the hospital, and you tell me he is a general paralytic. Where is the paralysis?" Of course one is obliged to say it will come. Therefore Wilks used to rather object to calling the disease general paralysis from a prophetic point of view. On the other hand there are some patients in whom the paralysis is the earlier symptom. I

will give you an instance. A solicitor used to come to consult me until he could no longer walk and I could no longer understand what he said, and yet that man's reason was as clear as possible. For two and a half years he had had progressive disease, with inequality of pupils and some slight changes in the discs; he had marked loss of expression, tremor of lips and tongue; he could hardly articulate; he had some difficulty in swallowing; his knee-jerks were very brisk, and he was slowly passing into this condition of inability to walk and speak. And yet he could instruct his partners in most important legal business up till the time that he was unable to move to the office. Later on he became weak-minded and died. In the general hospitals one is constantly asked to see people who are suffering from general paralysis with very few mental symptoms, and the question has been asked: is there any distinction between general progressive paralysis as you see it in the hospital, and such paralysis as you see in an asylum? One is obliged to say that if they live long enough they will both come to the same stage of weak-mindedness. One of the most characteristic symptoms of general paralysis is supposed to be buoyancy and exaltation. Nearly always there is a slight period of depression, a feeling that there is something going wrong. A physician to one of the large London hospitals ten years ago came to me one day. I had met him in Switzerland, and I said I did not know that man was likely to take to climbing. At that time I was climbing myself pretty much. He said, "I am going up this mountain, and that, and another yet." I did not think much more about it. I knew he was a talkative and excitable fellow. After I got back to England he drove over here to see me. The first thing he did was to burst into tears and exclaim, "I am going off my head; I believe I am becoming a general paralytic. I want you to arrange to take shorthand notes of my out-patient department, then you and I can bring out the finest system of medicine, and I will translate it into Greek and Latin, and in spare moments I will translate George Eliot's novels into Greek and Latin." He went on, "I am afraid you are not up to that?" And I said "No." These were the early symptoms of general paralysis of the insane, of which this gentleman died afterwards. Exaltation of that type preceded by a

period of depression is common. Another doctor came to me and said, " I am sure there is something wrong ; I used to be able to play six sets of lawn tennis and now I can only play two." He then burst into tears. That was the earliest stage of general paralysis, of which he died three years afterwards. As a rule there is the characteristic buoyancy ; there is what I call the jolly G. P., who comes smiling into the consulting room assuring one that they never felt so well in all their life, and feeling that everything is bright and happy ; his relations are the best, his acquirements are the greatest, he has a capacity for doing anything. But mind, you may have buoyancy and exaltation in young men, a mere exuberation of the useful quality, conceit, but in the latter you do not get much benevolence, whereas the general paralytic is not only grand in his ideas, but he is the opposite of mean. If you suggest that you have not got a million at your bank, " Well," he says, " What is your bank," so that he may supply your want ? You suggest that you do not belong to the Jockey Club, and he at once offers to put you up. It is a matter of perfect indifference to him what he promises. If you would like to have a seat at the opera he will take out a piece of paper and write you something which he thinks will be accepted as an order. The general buoyancy often leads to social and moral trouble. The man who believes the world belongs to him does occasionally fall into the hands of the police. When this patient whom we have seen was admitted he said he had come into a large fortune, for which statement it was found there was no ground. He also said he was to be made the Bishop of Southend ; that he was the elect of God, and next Sunday was to preach before the Prince of Wales and Lord Rosebery at the Congregational Church. He accuses himself of committing adultery, instead of which he has conducted himself well. He says he is going to preach before members of Parliament, that he is going to have plenty of money, and is coming in for a title. He had become a " hail fellow well met " with people he did not know, and he bought a horse and engaged a gardener a week before admission, as well as buying his wife a bicycle and his child quantities of toys. He had also been giving away money recklessly, his whole income being £200 a year. But now and then a man of this reckless type may make

a fortune. I have had two recently under my care, one of whom was in one of the large exchanges in London. He was a man of forty-five, and had had syphilis. He had lived a fast life, worked hard, and drunk hard. Many years after his syphilis he developed ataxic symptoms. All of a sudden he took a suite of rooms at an expensive hotel, and when I went to see him he had very many boxes of cigars, though he did not smoke himself ; these were for his friends, and he had £40 worth of scent for his lady friends. His wife was living at another hotel, and rather objected to his lady friends. That was at the time that the Fashoda business was on, and he invested in half a million of consols just when they happened to go down a pound or two, and netted a nice little sum. In the same way he speculated shrewdly enough, but recklessly, just as things steadily rose, so that he made twenty to thirty thousand pounds. Another patient at the same time saw a boom in iron and American rails and entered into contracts for half a million tons of iron, which went up five shillings a ton, leaving him in a very satisfactory condition from one point of view. He did many other things which would have dislocated his fortune. His one answer when I spoke to him was " did you ever make thirty thousand pounds in a week ?" This, of course, was unanswerable, and one could not help feeling that if one had appealed to a jury to inquire into this man's condition with the view to getting his estate administered, it would have been in vain with such a fact before them ; they would have thought that as he had done so well he had better go on doing.

Another symptom which is very constant in these patients is writing letters and sending telegrams, and that was the case with our last patient. If I am asked to see a patient and he brings bundles of letters and telegrams, I begin to be suspicious. I have told you that general paralysis is a progressive degeneration, and that when once started it, as a rule, follows more or less definitely certain lines. And it passes from the mind's highest acquirement down to its lowest. That is important in investigating the condition of the patients first of all. Supposing a man is an actor, such an one was in Bethlem Hospital, whose first symptom was that he was accused of being drunk because his articulation was no longer clear, and

people could not get the cue. In another patient, an actress, the first thing which was noticed was that instead of her speech being precise and crisp, she became awkward and did not recognise the parts. She was in Bethlem during the winter when dances were held. She was a professional dancer, and yet she was a most unfavourable partner to have, as she could not waltz or keep time properly. Another patient was admitted who had made his living by penmanship, but now he could not any longer earn his living, because his writing was so bad. Another man I remember, an artist, was noticed for the delicacy of his colouring. He asked if he might paint, and consent was given. He said he would paint something symbolical, and he painted a monster with a vermilion face and sea-green hair, yet he was perfectly satisfied with his delicate colouring of his Venus. That is to say, his first and most marked failing was shown along the lines of his highest development, and it is along those lines you must look if you are going to be of any use at all in your detection and early treatment of general paralysis of the insane. It is well to remember that in many of these people one of the earliest things is a change of type, a tendency to reversion to the lower less refined state.

We will now have in another patient. He says he is feeling well. There is a very slight tremor of the tongue, but you must not lay too much stress upon what has been made of that symptom. Sometimes you get a marked tremor of the tongue only when force is being exerted in protruding it. The man is thirty-one years of age and his father is sixty-eight. He says he sees equally well with both eyes. His pupils are nearly if not quite equal, but slightly irregular in outline. This is noteworthy. The reaction to light seems to be very imperfect. They react to accommodation. He sleeps only with the aid of a draught. The knee-jerks are brisk. He has no headache, and says he has not suffered from it. Now having seen this man, if you were asked to describe him I think you would agree with me that he looks exactly like many persons you have seen in the early stages of alcoholism—friendly with everybody, and if he had a few shillings to spend he would give them to you. He admires us all; we are all good fellows, and he feels himself fit to be Lord Mayor. You will notice a loss of expres-

sion; indeed, he has got a beer-drinking face. There is very slight inequality of pupils. General paralytics are often among the strongest looking men. If you took a large asylum and had all your male patients put together, and all your general paralytics put together, you would find the latter fine muscular looking men, with broad shoulders and plenty of hair, forming the front rank. Very few general paralytics are bald; most of them at forty or forty-five have their hair. You may say that the majority of men of forty or forty-five have most of their hair, but I am not sure of that. Still, the two patients we have seen are rather unusually young to be subjects of general paralysis. Let us go into the history of the case. He is thirty-one, married, but has no children. There is no trace of neurosis in the family. His business has been that of fruit merchant in the city. He has always been sober, but has been hot-tempered, and used to take a good deal of medicine for indigestion. It is a question whether he had influenza, but as far as syphilis is concerned the record says " query." I have no doubt I can complete the case from my private case-book. He experienced loss of money in his business in 1898 and 1899, and he began to imagine that he had various complaints resulting from syphilis. That is rather suggestive of syphilis. He seems absent-minded and silent. There was loss of memory. He would stand for a long time in the middle of a room, and said he had syphilis, and was giving it to everybody he came into contact with. He would not dress or undress himself. Lately he had to be made to eat his meals. He thought he had ruined his health by syphilis. This, then, was the melancholic stage of general paralysis. Soon after he came into the hospital he passed from this condition into one of buoyancy and extravagance, and a feeling of being thoroughly well.

It is well to remember that with general paralysis you have other diseases, or, at all events, other symptoms. Another and very important thing to remember is that syphilis has a great deal to do in the majority of cases to predisposing to the disease. You get comparatively few symptoms of coarse syphilis; you rarely find syphilitic headache; you rarely get ptosis, external strabismus, nodes, or troubles of that kind. The practical outcome of it is that, though you may have a dis-

tinct history of syphilis in nearly all your general paralytics, you will do very little good by treatment anti-syphilitically. You are bound to do something, and I am afraid the higher your social position the more you will stand a chance of suffering from treatment. There is a patient at the present moment, a very wealthy young Englishman, under my care. The history was that he had syphilis when quite a young man. He was one of the finest horsemen in England, and he got two severe injuries to his head from falling from his horse; he then developed typical symptoms of general paralysis. Of course there being a history of syphilis he was treated very carefully. He did not improve much. Iodides and mercury were tried alone and combined, but in vain, and after some time he was seen again and treated with intra-muscular injections of mercury to see what they would do. These have not done much, but in certain cases you get at least temporary benefit, and in very few you get something more. So in all cases of general paralysis of the insane, for want of something better to do medically you may treat them anti-syphilitically. There is only really one thing you can do, and that is to enforce the most restful life and conditions upon the patient. If you can let your patient browse in the country it will be well to do so. There is one patient whom I am seeing three or four times a year, an officer in a Welsh regiment. He had syphilis fifteen years ago. Four years ago he had depression and felt that something was wrong. Then he had become emotional and felt something was going wrong. He became sleepless, then distinctly hypochondriacal, thinking that his syphilis was going to break out again, and that he had better go to the German baths for treatment. Well, this patient was suddenly seized with a desire to get all the bands of the regular troops engaged in London, and had gone to see two or three contractors to know what it would cost to board Hyde Park. He was going to have all the regimental bands stationed near London to have a grand festival; everybody in England was to be invited, and he was to clear a million pounds, which was to go to our hospitals. Well, it was considered that that was too benevolent, and he passed into a private asylum, where for some time he wrote telegrams that were never sent and hundreds of letters and leading articles to the prin-

cipal journals—'The Times,' 'Saturday Review,' 'Spectator,' 'Nineteenth Century,' 'Quarterly Review,' letters to Lord Salisbury and the Prince of Wales; letters to generals and Freemasons, and to many distinguished people. He was going to unite all the creeds of religion in the world under one hierarchy, and everything was to be done in the grandest way. He passed from that stage into a quiet, weak-minded condition, and even went so far as to have fits. He became wet and dirty, and one prophesied that he would probably die soon. That is five years ago. But patients do not always fulfil your prophecy. He was sent to a quiet country cottage, where he could live a most restful and simple life, and he is living it still. When I go down he smiles and welcomes me, and always has a little button-hole to put in my coat to match his, and asks in the tenderest way about all my belongings. He has been kept alive by the absolute restfulness of his surroundings. He spends one hour and a half dressing and having a bath in the morning, an hour having his breakfast, another hour looking at the 'Daily Graphic'; then he goes off for a few hours' walk, and comes back for lunch; then he goes to sleep; then he goes for another walk and looks at the dogs and rabbits and things of that sort; then he comes in and has his dinner and chatters and plays execrably on the piano, and then goes to bed and sleeps for ten hours. And so he seems able to go on year by year. Some day he will have a succession of fits and die. But one of the characteristics of general paralysis, and one which you have to bear in mind, is that, though the majority of cases progress steadily from bad to worse and die, there are some which go to a certain level of degeneration and stop, and seem to require a fresh push to get the decaying process to progress further. As I mentioned yesterday, wills may occasionally be made by general paralytics that are perfectly reasonable in every detail.

We will see another patient. This man, you see, is in fear that something will happen to his relations; there is a foreboding of evil. He sleeps well. In your future practice the one thing which you will have to clearly differentiate in every male case is: is this a case of general paralysis or is it not? You know that although the majority of such patients have symptoms of exaltation, there may be any other form of mental

trouble in general paralysis. You may have melancholia, and if you do, it is generally of the hypondriacal type. You may have simply defect of mental power or you may have definite delusions. Therefore in every case which comes before you you have not only to take the mental symptoms, but you have to look out for physical signs. It is very rarely you get changes in the discs in the early stage. This man's pupils are equal and react. There is no marked tremor. His knee-jerks are normal. There is no exaltation of any kind. It is useful to have a case like this, because, looking at him now, I do not think anyone will at once form a diagnosis of general paralysis; but this may be a case of that disease. I will take the history and see if it clears it up in any way.

He is thirty-four, sober, no relatives insane; he is quiet and even-tempered, good at his work; nothing known as to syphilis. He had influenza two or three times last year. No previous attacks of mental disorder. The earliest symptoms of his present condition came on seven weeks ago. He does not know how long he has been in the asylum, and this want of memory seems a rather important fact. He has loss of facial expression. Now, if you notice a marked inconsistency between the mental and the physical sides in a case, be on the look-out for general paralysis. If a man, when you speak to him, tells you he is very miserable and very wretched, and yet you find he is sleeping well and eating well and getting fat, there is an inconsistency about it, and it is very common to meet with that inconsistency in general paralysis. Here is a man who says he feels wretched, and the tears soon flow, but he sleeps well and is getting fat. His handwriting is uncertain and shaky, which is another thing against him. He complains of pain in the head, his conversation was rather wandering when he came home from his work at night, and he was very depressed and complained of pain in his back. He seemed to be worrying about his office and would frequently cry. He tried to commit suicide by tying a handkerchief round his neck. He says he was indecent in his behaviour and had a ravenous and unnatural appetite. He has a delusion that detectives are watching him and that he will have five or ten years penal servitude. He tried to secrete knives in his pocket and to escape from imaginary foes and detectives. The

pupils are equal and normal in reaction. He sleeps fairly, but the facial expression is rather defective. There are no hallucinations of any kind. One can only say, therefore, that here is a patient suffering from melancholia, but remember it may be more. I shall decline altogether, and should advise you under similar circumstances to do the same, to say at present that he is a case of general paralysis. It is well to have before your mind the fact that patients may suffer from general paralysis and yet be melancholic during the earlier stages, that in fact, as I pointed out to you, mania, melancholia, or dementia or delusional insanity may depend upon disease or decay or the brain itself. Similar symptoms may depend upon mal-nutrition only of the brain, or upon disorder of the brain associated primarily with defective nutrition and disorder of the body apart from the brain; thus you may have melancholia or defective control or delusion depending upon phthisis or upon gout or upon uræmic troubles. You have, then, to remember that in progressive degeneration of the brain you may have any one of the symptoms above named. To resume, then, the more common symptoms of general paralysis of the insane are a short period of depression followed by a longer period of buoyancy and general benevolent exaltation, followed by the stage which tends to weak-mindedness, associated later with fits. I shall not have time now to consider the relationship of fits, but before bringing this talk to a close I would say that we have only taken two stages of general paralysis, the threatening stage and the early stage. After the early stages you may have, and generally do have, the second stage, the one I have referred to as the fat stage. One of the old attendants in the Bethlem Hospital used to call it the " piece-bowl" stage. After dinner there is a bowl for putting in the pieces which are left. The general paralytic when he gets to a certain stage of degradation goes outside the ward after dinner and picks out and eats the pieces from the piece-bowl. Then comes the stage of weak-mindedness, coupled with bodily weakness, when fits are more common and when the end is approaching.

I will now take you to the bed of a patient, in which he lies almost motionless, with limbs contracted, and about whom you can demonstrate as much as you like without arousing any interest

in him. I have examined him once or twice in the last two years as a buoyant individual, and now here comes the last stage, in which there is contracture of the limbs, wasting of the brain and wasting of the nerve tissue altogether, a tendency to bed sores and to low forms of inflammation. There may be also inflammatory conditions of the bladder, hæmorrhages into the viscera and into the skin, and you may get rapid blood poisoning. One of the remarkable points about this condition is that there is loss of common sensibility. I have known cases nearly as bad as this go to sleep over the fire and calmly sleep while the hand has roasted; I have known a man who objected to one limb being longer than the other calmly get a piece of pumice and try to rub it down. So that in some cases you not only get profound nutritional changes but also profound defect of sensibility. The gastric reflex is still present in this man, as shown by the response when I touched his lips with my keys, just like the response of newly-born birds when their mother touches their beak with food. Such a patient as this may last eighteen months with good nursing and care.

Dr. MICELI, of Messina, after researches directed to obtaining a preparation of mercury soluble in water, of ready efficacy, and which would not provoke pain or induration in the parts where it has to be injected, has succeeded in preparing his anti-syphilitic hypodermic solution, which he says fully responds to the above requirements. Miceli's preparation is a new salt (double hyposulphite of sodium and of mercury), in the form of a solution in distilled and sterile water. The liquid is without colour or odour. The solubility of this salt exceeds that of all other salts of mercury, and does not produce mercurial stomatitis. The hypodermic solution never produces indurations, is more ready in its efficacy than the other preparations of mercury. Miceli's solution is carefully prepared under his immediate surveillance, and is put up in bottles, each sufficient for twelve injections. It is used with the rules which regulate the injections of other mercurial preparations. —*Therapeutic Gazette*, June, 1899.

REMARKS ON IRITIS.*

By PERCY DUNN, F.R.C.S.,

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IN venturing to address you upon the subject of iritis, I am mindful that it is often useful to recall and recast our knowledge of a particular disease, inasmuch as the opportunity is thus afforded of learning exactly where we stand, respecting our experience of it, and, at the same time, we are enabled to gather something of the extent of our deficiencies in the same connection. But such mental stock-taking must always be profitable, even if it be disciplinary, and constitute in some cases a more or less arduous task. Nevertheless, this must be my excuse for asking you to consider with me this evening a theme such as that of iritis, with which all of you are, in greater or less degree, familiar.

I suppose that, in the first place, I should say something of the classification of the disease. But, in reverting to this part of my subject, I do not intend to burden you with a long list of the various causes of iritis with which text-books upon ophthalmic surgery, among other things, inflate the covers of their pages. So far as the causes of the disease are concerned, it will suffice here to state that only two are generally met with, namely, the syphilitic and the rheumatic. Of the two, the latter is now the most common, its occurrence being proportional to the frequency with which rheumatism is met with in comparison with syphilis. Again, so far as syphilitic iritis is concerned, I think, as time progresses, that it will be less and less frequently seen. The probability of this being the case may be attributed to the fact that the treatment of primary syphilis is now so much more scientific and thorough than used to obtain in earlier days. Furthermore, it is only rarely now that cases of double syphilitic iritis are met with, the explanation being, as I believe, that the patients come early under efficient treatment before the syphilitic virus has had time to expend itself on both eyes.

Iritis, in the course of syphilis, belongs to the so-called secondary period, and is usually

associated with some other manifestation, such as a papular or macular eruption. This latter affords at once the clue to the origin of the ocular trouble. A patient who comes complaining of an inflamed eye, upon whose forehead a papular syphilide is marked in all its undesirable obtrusiveness, is almost certain to be suffering from a syphilitic iritis. In the routine of the study of ophthalmic diseases, it need scarcely be pointed out that, by carefully noting the patients' faces, we are often enabled to glean valuable information bearing upon the trouble for which relief is sought.

What are the distinctive features of iritis due to syphilis? In the early stages, perhaps, the most characteristic sign is turbidity of the aqueous. This is sometimes so marked as to give rise to the belief that the hazy appearance present is due to inflammatory changes in the cornea. Next, in bad cases, where the treatment has been neglected, beads of lymph develop upon the pupillary border of the iris. These cases are the most unfavourable of all, so far as any successful result to be expected from treatment is concerned. The exudation of lymph, under such circumstances, generally means that the pupil has become firmly bound down by posterior synechiæ to the anterior capsule of the lens, and that nothing short of operative interference, subsequently, will be of much avail in restoring some of the vision which has been lost. Unfortunately, too, in many cases, a bad attack of syphilitic iritis is not merely an external ocular manifestation of this constitutional disease, for other structures of the eye may at the same time be involved. For example, inflammatory changes may ensue both in the choroid and retina, also in the optic nerve and vitreous. Another point particularly worthy of mention is that the tendency of this variety of iritis is to the formation of pigmentary deposits upon the anterior capsule of the lens. And here it may be said that in all cases of suspected iritis the eye should invariably be examined by means of the oblique illumination. Unless this method of examination be resorted to, it is impossible to determine, with any degree of accuracy, the exact condition of the iris, the pupil, and the structures adjacent thereto. The value of determining whether or not in after years a patient shows evidence of uveal deposit upon his lens capsule, is

that, where such evidence exists, it points to an antecedent iritis, which was probably syphilitic. Thus a very important detail is elicited in respect to a patient's history, which, at any time, may prove of value from the point of view of treatment. In this connection, the following story is of interest. An ophthalmic surgeon, some years ago, was called into a medical ward to examine the eyes of a patient in a semi-comatose condition, whose symptoms were supposed to be due to a cerebral tumour. The case had proved a puzzling one to the physician, and its nature was quite a matter of doubt. Upon examination, the surgeon found evidences of old iritis, and much deposit of uvea upon the anterior capsule of the lens. Basing his opinion upon these signs that the patient had had syphilis, he advised the administration of large doses of iodide of potassium. The advice was immediately followed, and the man made a good recovery. There are said to be sermons in stones, but not infrequently it happens that the ophthalmic surgeon is afforded the opportunity of reading from the pathological relics in an eye, as from a book, much that relates to a patient's past history.

Destructive, however, as a bad attack of syphilitic iritis is likely to prove, both to the vision and the ocular tissues, nevertheless, there is one redeeming feature in regard to the disease, namely, the almost complete absence that it shows of any tendency to relapse. A relapsing iritis is not one which is syphilitic in origin. The primary iritic attack having been well recovered from, the eye is never likely to become again, save in excessively rare instances, the seat of any further syphilitic manifestation.

A word or two may now be said concerning the pain observed in these cases. It is true to remark that this is a variable symptom, but it is not correct to say that the pain in syphilitic iritis is commonly insignificant in degree. Indeed, experience teaches that the pain is often most acute, imperatively requiring active treatment for its relief. Moreover, it is generally persistent, that is to say, its tendency is to increase in severity until relieved by treatment. Again, the rule is for it not to recur after its relief has been once effectually secured.

I now come to rheumatic iritis.

It is not always possible to obtain from patients

suffering from an acute attack of rheumatic iritis
a personal history of rheumatism. Frequently,
however, I have found that they are able to admit
to a history of gout or rheumatism in their
parents. But, in the majority of cases, the
patients have suffered from articular rheumatism,
or have had attacks of erythema nodosum, scia-
tica, lumbago, or have shown other symptoms
usually associated with a rheumatic diathesis.
There is nothing distinctive in the facial appear-
ance of patients suffering from rheumatic iritis,
unless it be that they are generally healthy look-
ing. The conjunctival blood-vessels are deeply
injected, as well as the ciliary vessels around the
cornea. The aqueous is quite clear; the pupil
generally contracted, or sluggish, or immovable
and irregular; the lustre of the iris is dimmed.
The pain and photophobia are very variable;
commonly the former is not troublesome during
the day, but is apt to become very acute at night
time, preventing the patients from sleeping. The
latter accords with the history of other rheumatic
affections. Two features of special significance
may now be referred to. So far as the effects of
the disease upon the eye are concerned, the first
is favourable, the other unfavourable. In rheu-
matic iritis there is but little tendency to the
exudation of plastic lymph, that is to say, the
disease partakes more of the character of a serous
than of a plastic inflammation. The advantage of
this to the eye is obvious. Instead of an iritic
attack being associated with the free exudation of
lymph, followed by the formation of firm posterior
synechiæ, the exudation is very slight in degree,
and the damage to the eye is, of course, corre-
spondingly less. The unfavourable feature is the
tendency which rheumatic iritis invariably shows
to recur. The explanation of this is plain
enough. In syphilis the active effects of the
virus are easily subdued by treatment, thus plac-
ing the eye beyond the reach of further danger.
On the other hand, in rheumatism the constitu-
tional taint, so to speak, despite the treatment,
remains, and is liable at any time to assume a
renewed activity. Thus it is that rheumatic iritis,
by its frequent recurrence, may prove very harm-
ful in its effects. In time, posterior synechiæ form,
the iris structure degenerates, the capsule of the
lens becomes thickened in the pupillary area, and
the eye practically useless for the purposes of

vision. In passing, however, I may observe that
it is rare to come across cases in which these
extreme effects are manifested, inasmuch as effi-
cient treatment is able to accomplish much in
warding off the secondary changes, so harmful to
an eye, associated with recurrent rheumatic iritis.

I now come to the question of treatment. At
the outset mention may be made in this connec-
tion of two untoward accidents, either or both of
which may occur. First, the patient may delay
seeking advice until the iritic inflammation has
caused irrevocable injury to an eye. Next, a mis-
take may be made in the diagnosis of the disease.
Of the two, perhaps, the latter is the most serious,
inasmuch as it may lead to the case being treated
in the reverse manner to that which an iritis de-
mands. The error has from time to time been
made of treating, inadvertently, rheumatic iritis as
conjunctivitis, and of applying astringent lotions,
either of sulphate of zinc, or even of nitrate of
silver. In such cases not only is valuable time
lost in resorting to the necessary treatment, but
the inflammation is generally greatly aggravated
by the applications employed.

The cardinal point in the treatment of cases of
iritis, is to secure as rapidly as possible the maxi-
mum dilatation of the pupil. As soon, then, as
the presence of an iritis has been determined,
some drops of an atropine solution of the
strength of two grains to an ounce of water should
be at once instilled into the conjunctival sac, and
the same repeated every four hours. It were
better that this course should be pursued where
some doubt exists as to whether the case be one
of iritis or conjunctivitis, rather than that the risk
should be run of mistaking the latter for the
former, and treating it accordingly. Having, then,
taken steps to secure the integrity of the pupil,
attention may next be directed to the general
treatment of the disease, and here, of course,
everything depends upon the cause of the iritis.
I have so far confined myself to the cases in
which the origin is syphilitic and rheumatic, and
I will therefore limit my remarks to these two
varieties. The treatment of syphilitic iritis is, for the
most part, merely that of constitutional syphilis.
Mercury is, of course, imperatively demanded
either by inunction, by the mouth, or some
other method. It has been said that in the treat-
ment of syphilitic iritis, the full benefit of the mer-

cury can only be obtained by pushing the drug to the extent of producing salivation. But I do not agree with that view. Indeed, in these days of scientific therapeutics, I submit that salivation occurring during a course of mercurial treatment is evidence that the drug has been carelessly employed, or that its administration has been pushed beyond a legitimate degree.

But, beyond the use of atropine, what other local treatment does a case of acute syphilitic iritis demand? Practically nothing, save in those cases in which intense pain is present. In the treatment, however, of this symptom there is seldom any difficulty. The local suffering is readily subdued by local depletion. One or two leeches applied to the temple will quickly relieve the pain. Rather an amusing incident occurred to me in this connection quite recently. A man came to my out-patient room at the West London Hospital with an acute attack of syphilitic iritis of his right eye, and an extensive papular syphilide upon his face. Mercury by the mouth was ordered, and the instillation of atropine drops. In a week's time he returned complaining of intense, almost unbearable, pain in his eye. I ordered a leech to be applied to his right temple as soon as he reached home. Two days later he came to see me again. "How is the pain?" I said. "All gone, sir." "Did you put on the leech?" "No, sir." "Why not?" "Well, sir, I forgot to tell you that I have varicose veins on my left leg. As I was walking home the other day one of the veins suddenly burst, and by the time that I was brought back to the hospital I had lost a lot of blood. The pain soon ceased in my eye, and I've had no more since." Thus, in this case, general depletion accidentally took the place of local depletion, and the result was quite as satisfactory.

While upon the subject of pain, I may now refer to the treatment of that met with in rheumatic iritis. Local depletion in these cases is less indicated. In acute syphilitic iritis the pain appears to be mainly due to the intense vascularity of the ocular tissues; on the other hand, in rheumatic iritis, it appears to be more of a neurosis, or, at all events, comparable to that observed in other rheumatic affections, such as lumbago, sciatica, &c. Consequently, in the relief of the nocturnal pain of rheumatic iritis, nothing

yields such good results as the application of dry heat. Some surgeons recommend moist heat, but the use of moist heat in eye surgery, I think, is best confined to affections of the cornea, as, for example, sloughing ulcers. The form of application of dry heat to which I resort is the old-fashioned bran poultice. Patients are directed to make a large bran poultice, to heat it as much as possible, and then to lie down in bed, and place the poultice over the affected eye. My invariable experience is that the pain is quickly relieved, as the result of which the patients are soon enabled to fall asleep. But in rheumatic, just as in syphilitic, iritis it is very essential that the patients should be brought under the influence of constitutional remedies. In rheumatic cases it is common now to administer the salicylate of sodium, and this is highly useful. But it is not always that this drug is satisfactorily tolerated, and then some other remedy must be substituted. An old-fashioned formula is one containing colchicum wine, iodide of potassium, and tincture of aconite, which often yields excellent results.

A detail of some importance is: How long should the instillation of atropine be continued after the evidences of the inflammation have subsided. Generally speaking, the mydriatic should be continued for at least a month afterwards in all cases. The atropine acts as a splint, so to speak, to the iris, maintaining it in a condition of absolute, that is to say, complete physiological rest, thus avoiding any source of irritation which would be likely to arise were it allowed to prematurely resume its ordinary functions.

In syphilitic iritis the first indication of improvement noticed in the course of the treatment is the restoration of the transparency of the aqueous; in rheumatic, the first noticeable feature towards recovery is the commencing subsidence of the vascularity of the globe. Sometimes, while a case of iritis is under treatment, a patient may come in an alarmed state to his surgeon, stating that he has suddenly become quite blind in the affected eye. On examination, it will be found that the anterior chamber is full of blood, caused, perhaps, by the rupture of an adhesion. No significance need be attached to this condition of affairs. The blood will be readily absorbed in the course of time, and the vision recovered.

Another point. Is it necessary to keep a

patient suffering from iritis in a dark room? As a punishment for any sins that he may have committed, and with the object of affording him a favourable opportunity of indulging in penitential meditation, no doubt this course could be strongly commended, but, so far as his iritis is concerned, it is quite uncalled for. Iritis is a depressing disease, and one of the main objects of treatment is to keep the patient from thinking about his eye and of himself. All that is requisite, therefore, is to order a shade to be kept over the affected eye, supporting a large pad of absorbent wool. By this means complete rest and warmth are secured for the affected organ, and, with the pupil well under the influence of atropine, no harm can ensue from any light to which the fellow eye may be exposed. Of course, due regard should be paid to the patient's general health, and whether suffering from syphilis, or rheumatism, he should keep himself warmly dressed, avoid exposure to cold, and be careful to abstain from a stimulating diet. What, therefore, would be advisable in this regard for his constitutional malady would be equally useful in the treatment of his iritis. Another point. Should counter-irritation, in the form of blisters, be resorted to in the treatment of iritis? Personally, I object to blisters. They are a source of annoyance to the patient, and even if it be admitted that their use is occasionally of service, I nevertheless think that they scarcely accord with the principles of modern treatment. Just as the old-fashioned seton has been discarded in the treatment of ulcers of the cornea, so I believe that the blister will in time be relegated to the region of forgotten remedies employed in the treatment of eye diseases. If an eye fails to recover from an attack of iritis, in which the usual treatment has been followed, it is not a blister or blistering which will bring about a good result. For example, a rheumatic iritis which has resisted treatment for some weeks may be regarded as one the intractability of which is dependent upon the diathetic vice to which it owes its origin; that is to say, that the disease is something more than a local inflammation, and is not likely to be amenable to local remedies. Hence, in these cases, improvement can only be sought through the medium of climatic and hydro-therapeutic treatment, and attention to all those special details designed to improve the general constitutional condition of the patient.

One more point. Is it of any service instilling atropine in a case of chronic relapsing iritis, in which the pupil is bound down by posterior synechiæ? There is no doubt that the drug is of use in these cases. It seems to act as a sedative, even if it cannot cause dilatation of the pupil. Moreover, should there happen to be a portion of the iris still unattached, atropine will act beneficially by dragging it away as far as possible from the centre of the pupillary area. Atropine, therefore, should be instilled in chronic recurrent cases just as frequently as if the maximum benefit from its employment were being obtained Its sedative effects are often most marked, and the patients are not slow to express the relief which they derive from its use.

In conclusion, I may be permitted to observe that my endeavour has been to make this paper as practical as possible, and to travel over ground which would be likely to prove most acceptable to the members of this Society. I have intentionally omitted all mention of cases seldom met with in practice, for I felt that these could not be instructively dealt with without having patients at hand with which to illustrate them. Thus I have confined myself as much as possible to practical matters, with the hope that my remarks may lead to a profitable and interesting discussion.

Dr. SPRATLING considers that the regulation of the life-habits of epileptics has proved more efficient than any known drug treatment. A man who had gone from one institution to another had been discharged as incurable. He came to the Craig colony, and examination failed to show anything wrong with him except a general malnutrition. Every attention had been given to feeding him and supplying proper exercise in the open air. The first month this man had had 110 seizures, the second 98, the third 3, and the fourth none at all. He had been discharged from the colony, having gone 24 months without a seizure. This man had reported that he had had no more seizures and was earning his living.—*Medical Record*, June 24th.

MEETING OF THE SOCIETY OF ANÆSTHETISTS,

At 20, Hanover Square;

Dr. DUDLEY BUXTON in the Chair.

The PRESIDENT said they must all feel very indebted to Dr. Turney for his most interesting paper. He had selected a subject which was new to the Society, but one which was certainly of the first importance to its members. He ventured to think that most, if not all, forms of paralysis to which Dr. Turney had referred were preventible, and, therefore, should not occur. Certainly forewarned in this case was forearmed, and one would be more keenly alive, for example, to the dangers of dragging the arm above the head. He thought they were all fairly familiar with that form of paralysis resulting from pressure of the arm against the edge of the operating table. He remembered his colleague, now unfortunately gone, Mr. Beck, drew attention many years ago to a case of paralysis which occurred in his practice. At that time surgeons were not so familiar with the condition as they are now, and the case excited a great deal of attention and interest. He could not but feel that the extension of the arm above the head would have to be of a very pronounced kind to bring about the anatomical relations to which Dr. Turney had referred. Dr. Turney had evidently studied the matter, not only in theory, but actually in the dead-house upon the cadaver, and there could be no doubt that his facts must be accepted. He, the President, did not know that anæsthetists were so extremely anxious to feel the radial pulse as to be induced to drag the arm up in the way described, but certainly they were induced to do so by their anxiety to remove the limb from the field of operation of the surgeon, and to avoid the inconvenience experienced by the limb flapping against the operator. It would be very interesting to obtain further information if Dr. Turney had leisure to give it to them upon that very difficult group of cases to which he referred in passing—paralysis following upon hæmorrhages in the course of anæsthesia. Many cases of such hæmorrhages had been recorded,

many of which had unfortunately resulted in death from hæmorrhage into the pons and so on, but one felt that the whole question of hæmorrhage and paralysis following hæmorrhage under anæsthesia required very careful sifting. It was important to have the due degree of responsibility properly allocated between the anæsthetic and the excitement of the patient in the earlier stages of narcosis, or, as one might say, in the pre-anæsthetic stage. Possibly if Dr. Turney had any further facts on this point to bring before the Society, he would do so in his reply.

He felt sure he was expressing the feeling of the Society when he said that they were extremely obliged to Dr. Turney for the very able way in which he had brought the matter before them, for the very lucid manner in which he had marshalled the facts into line, and had carried them within the range of those of them who were not so familiar with the details of neurology as was Dr. Turney himself. One often felt grateful to a man who read a paper, and one felt more grateful to him who brought his own subject before them in such a way that any one was able to look at it in the same way as the reader did himself; in fact, where the reader took his hearers into his confidence and enabled his listeners to see the facts as he saw them himself. That Dr. Turney had done, and, having done so, he placed himself in the position of one who had conferred a very great benefit upon the Society. Perhaps the best compliment that they could pay Dr. Turney was to discuss his facts, and to bring forward any experiences that they might have bearing upon the subject.

Mr. TYRRELL said he would like to endorse the President's remarks upon Dr. Turney's paper. He (Mr. Tyrrell) had very little experience of post-anæsthetic palsies, most of the cases having been extremely soon recovered from, having been due really to the arm having been laid on. But there was one remark he would like to make, following that made by the President as to the arm having to be raised in a very pronounced manner to produce such symptoms. He knew a leading London surgeon who always had manacles placed at the head of the operating table and fastened to the patient's wrists. For years he believed this was the surgeon's practice. Whenever he (Mr. Tyrrell) gave an anæsthetic for that surgeon, the

nurse used to put the wrists into the manacles and then the manacles were fastened to the head of the table, and he did not think the arms were raised more than that. Four or five months ago these manacles were done away with; they had not been seen since, because of results ending in paralysis which lasted for a long time.

The PRESIDENT asked what was the nature of the palsy; did it affect the shoulder or the arm?

Mr. TYRRELL said he could not say, he only knew that there was paralysis and that the manacles had not been used since.

Mr. WALLACE said he remembered the case of the man with the abscess which Dr. Turney related, but beyond that he did not think he could give chapter or verse on the subject. That case came first on the surgical side, and therefore under him (Mr. Wallace). He (Mr. Wallace) looked at this abscess, and puzzled as to what could be the cause of the paralysis. The patient was sent to Dr. Turney in the ordinary course for the nerve lesion, and Dr. Turney afterwards explained the cause to him. Until then he had been puzzling whether the patient had accidentally had a nerve divided or injured in the operation.

Dr. TURNEY, in reply, said he had very little to add to his paper. With regard to the question of cerebral lesions, particularly hæmorrhagic ones, to which the President had referred, he did not lay much stress upon them, because it seemed hardly fair to rank them (putting the *post hoc* as *propter hoc*) as post-anæsthetic, because there must be some excitement associated with the anæsthetic at the time of administration, and probably a certain amount of struggling; at all events the conditions must necessarily be favourable to the giving way of a rotten artery. All the cases of that kind which he had seen were in people late in life where the arteries were diseased, and he looked upon the anæsthetic as the immediate exciting cause. If the anæsthetic had not been given, perhaps a few days or a month later the same event would have happened. With regard to the symptomatology of the lesions themselves, they would be the same as under other circumstances. Some authors, particularly one in Belgium and some in France, laid very great stress on the toxic action of the anæsthetic. He (Dr. Turney) just referred to the possibility of there being a direct toxic action, but that idea seemed

to him to be very far fetched. These cases were first called chloroform paralysis, because they happened to be observed first of all in chloroform administration in Germany, when ether was scarcely used. As soon as ether began to be introduced these palsies were no longer thought to be due to some specific action of the chloroform; it was found that ether was as likely to produce these results as chloroform. He did not think there was any reason to suppose that the anæsthetic had any toxic effect on the nerve tissues, thereby bringing about paralysis, that might come into question in the case of cerebral lesions. One curious thing was that facial paralysis had been noted, which could not very well be accounted for as a sequela of the administration of an anæsthetic. He did not know whether it was a coincidence, but facial paralysis had been described. Regarding the probability of paralysis occurring as a result of the elevation of the patient's arm, he thought that, if once the danger were recognised, the elevation of the arm could not be performed safely, if one might put the matter in a paradoxical way. The condition could be largely avoided by regulating the position of the head. Knowing that the action could produce such results, he thought they should be very chary about bringing the arm up at all forcibly, and particularly of bringing it backwards and upwards. It seemed to him it was not necessary, even from the surgeon's point of view. He had seen abdominal operations, for example, where the arm could be covered with sterilised towels and be allowed to lie at the side of the table, without hanging over the edge of the table, and without inconveniencing the surgeon at all. It seemed to him the manoeuvre was hardly necessary except in operations on the axilla or high up in the chest, particularly for empyema.

The Treatment of Falling of the Hair by Simple Irritation. — Jacquet, in 'La Presse Médicale,' for December, 1898, says that irritation is the basis of all treatment of alopecia. Mechanical irritation he regards as quite as efficient as chemical. For this purpose he uses a stiff brush, with which the affected area is vigorously irritated, the effect being carried to a point just sufficient to produce simple hyperæmia, but without inflammation or exudation. The applications should be made from four to six times a day.—*Medicine.*

CONTENTS.

NOTICE.

CHAPTERS FROM THE TEACHING OF DR. FREDERICK ROBERTS.

REMARKS ON SKILLED CLINICAL EXA-MINATION OF THE THORAX AND ABDOMEN.

AMONG the evidences of the progress of practical
medicine during recent years, none are more con-
spicuous or significant than the additions to and
improvements in the methods of clinical investiga-
tion in various directions, many of which have
proved of such inestimable service for diagnostic
purposes. By their aid not only has diagnosis
been rendered incomparably more definite and
accurate, but many diseases can now be detected
at an earlier period which formerly could not be
recognised until they were far advanced, while
others are readily discovered which were at one
time beyond the reach of positive clinical know-
ledge or demonstration. Moreover, methods
which have long been practised have come to be
employed much more widely and intelligently; and
during the course of the medical curriculum the
necessity for systematic instruction and training
in this department is now generally acknowledged
and acted upon.

As a clinical teacher, I have been much in the
habit of discussing on a comprehensive and prac-
tical basis what may be termed the skilled clinical
examination of the thorax and abdomen respec-
tively, and of structures intimately connected with
certain of their contents. Before dealing sepa-
rately with these regions, it is desirable to regard
the subject from a general standpoint, so as to
afford an insight into its elementary principles,
and to bring out certain points which apply to
both parts indiscriminately. I have used the
expression "skilled clinical examination" ad-
visedly, in order to emphasise the facts that it
implies the possession of personal skill of a par-
ticular kind, demanding systematic training and

prolonged practice, very much more difficult to attain than that required for the mere investigation of ordinary symptoms; and also that it includes a great deal more than can be fairly brought under the head of physical examination.

The term may be conveniently limited to certain comparatively simple and well-known methods— including mainly *inspection, palpation, percussion,* and *auscultation*—which are more or less applicable to all cases. But in addition we have to recognise as distinct parts of this skilled examination the investigation of secretions, excretions, or morbid discharges and other products, especially by *chemical* and *microscopical* methods. Also of frequent application is the employment of various special methods or instruments, intended for the examination of individual organs, or only called for under particular circumstances, not forgetting the remarkable modern aids to diagnosis, especially skiagraphy, the use of anæsthetics for diagnostic purposes, and operative procedures of different kinds. Clinical bacteriology might also be conveniently regarded as a separate branch coming under this head.

The inherent and far-reaching importance of skilled examination, in relation to the diagnosis of diseases of the chest and abdomen, cannot be over-estimated. This fact is at the present day almost universally acknowledged in theory, but it is by no means always recognised in practice as it ought to be. One's first duty, therefore, in attempting to teach this subject, is to enforce the truth just enunciated, and this may perhaps be more readily and emphatically done by a few practical illustrations of the definite purposes which such examination fulfils.

1. It may be confidently affirmed that in a large proportion of even ordinary cases occurring in practice, whether acute or chronic, where symptoms of various kinds are associated with the chest or abdomen, it is quite impossible to determine the conditions upon which they depend, or to make anything like a reliable or accurate diagnosis, except by direct personal examination; while, on the other hand, the recognised methods of physical examination, if properly carried out, as a rule, afford all the additional information necessary for coming to a practical conclusion, not only as to the general nature of the case, but also as to the actual morbid lesions with which we have

to deal. And it must never be forgotten that the detection of such definite lesions may be of the greatest value as an indication for active treatment, especially in acute diseases, where urgent measures may be called for; but, even if this be not the case, obviously a knowledge of the physical or other changes existing in a particular instance cannot fail to be a most useful guide in prognosis, as well as in determining how far treatment can be of service, and in what directions it has to be carried out. In short, instead of groping in the dark, and acting on mere guess-work, the practitioner who has properly examined the chest or abdomen in any case in which symptoms associated with either of these regions are present, and where some positive disease exists, is generally able to found his opinions and therapeutic management upon definite knowledge. To deal with any symptom or group of symptoms without having made any, or, at the best, only a very inadequate attempt to determine what they depend upon, is under such circumstances utterly wrong and reprehensible.

2. In the next place, skilled examination is of the greatest service in detecting disease in its early development, when symptoms are perhaps absent or slight, or of no particular significance, and it may thus be the means of arresting serious mischief, by leading to the adoption of suitable preventive or curative measures, or, at any rate, of prolonging life. Pulmonary phthisis affords one of the most striking examples of this class of cases, but cardiac and vascular affections, carcinoma involving certain organs, and renal disease may be mentioned as further illustrations of complaints which may come under the same category. Unquestionably the habitual employment of examination of the chest as a routine part of clinical investigation has often lead to the detection of morbid conditions in their early stages, which, if they had not been thus discovered, would have inevitably ended in permanent and irreparable mischief; while, on the other hand, carelessness and neglect in this respect accounts in no small degree for the great mortality from chest affections, especially phthisis. It certainly should be carried out if there are any symptoms connected with this region, however slight they may be, and especially if they have continued for any length of time. It would not be a bad plan if those who have any

hereditary predisposition to pulmonary complaints, or who are habitually exposed to causes likely to produce them, were examined from time to time, as a mere precautionary measure, even though there were no obvious symptoms whatever. In the case of the abdomen, satisfactory physical examination is not so easily practised, but, if there are any suspicious symptoms, it ought not to be neglected; and the examination of the urine, as a matter of routine in clinical investigation, is to be strongly recommended in a large number of cases which come under observation in daily practice.

3. But, further, it is still more important to remember that marked, extensive, and even immediately grave morbid conditions not uncommonly arise in an insidious manner, both in the chest and abdomen, which are practically latent so far as ordinary symptoms are concerned, but which are at once revealed on physical examination. Some of these conditions may be actually acute in their development, and may demand immediate treatment, so that their recognition under such circumstances becomes all the more imperative. Latent pleuritic or pericardial effusion, some cases of pneumonia, especially apical, acute pulmonary tuberculosis occasionally, and certain other forms of phthisis afford apt illustrations of this point. It is remarkable to what an extent phthisical destruction of the lungs may sometimes proceed, without giving rise to any definite or characteristic symptoms. Hopeless cardiac affections are not unfrequently unattended with any symptoms whatever, and may only be detected by a casual examination; and even such a complaint as aneurism, or a mediastinal tumour, in not a few instances presents a similar clinical history. In connection with the abdomen examples of the fact now under consideration may be afforded by a distended bladder, fæcal accumulations, peritonitis, serious renal disease, and enlarged spleen, tumours of various kinds, and even grave malignant disease. I have personally been many a time astonished by the conditions I have found on examination, for the existence of which, symptoms afforded no warrant for suspicion.

4. Thus far we have been dealing with simple conditions, but another very striking fact which has to be noted in relation to skilled examination is that in a large proportion of cases involving the chest or abdomen there exist more or less complicated combinations of morbid changes, and it is obviously only by a systematic and intelligent investigation of this kind that there is any chance whatever of determining the actual state of things. When the various lesions are thus recognised and understood, the meaning of any symptoms present can, as a rule, be readily and intelligently explained in relation to these lesions; but such combinations are sometimes found when symptoms are practically absent, or of little or no significance or consequence.

5. The negative value of skilled examination must not be ignored or forgotten. There are numbers of persons who, either on account of some abnormal sensation, or for other reasons, imagine or dread that they are suffering from some more or less grave complaint, which really does not exist. One of the few gratifying events in medical practice is to observe the evident sense of relief which the majority of such patients exhibit when, after adequate and appropriate investigation, they can be assured without hesitation or doubt that they are not the victims of consumption, heart disease, aneurism, abdominal dropsy, or tumour, or whatever other terrible malady they may have severally fixed upon as the cause of their troubles; and that their symptoms are entirely subjective or functional, or depend upon some comparatively unimportant condition, such as a localised pleuritic adhesion, or a movable kidney in abdominal cases. Certain individuals, however, belonging to the class of malingerers or confirmed hypochondriacs, are anything but pleased to be told that there is nothing the matter with them, and such persons generally consult a succession of "specialists" of various descriptions, until they find one clever and skilful enough to discover a definite cause for their sufferings!

6. It may seem superfluous to draw attention to the invaluable help which various kinds of skilled methods of investigation often afford in difficult or obscure cases, and yet observation compels me to state that even under such circumstances their usefulness is not always appreciated as it ought to be. Moreover, in examining for life-assurance and allied purposes, if this is done in anything like an efficient manner, ordinary physical examination should at least be properly

carried out, while it is never safe to neglect examination of the urine.

Nature and limits of information.—While thus fully recognising and emphasising the essential and far-reaching importance of the various methods of skilled examination for diagnostic purposes, it is, on the other hand, most needful at the outset to warn against relying upon them too implicitly, or making too much of them; and at the same time to endeavour to present rational views as to the kind of information which they are capable of affording, as well as its limitations. Undoubtedly there is in some directions a tendency to exaggerate the usefulness of these methods, to be guided entirely by what they do or do not reveal in a particular case, and to misunderstand the significance of the phenomena observed by their aid. These remarks apply even to ordinary physical examination, but with still greater force to certain more special methods which are now so much in vogue. Errors in diagnosis may thus arise, quite as serious as those which result from their neglect, though they are not of such common occurrence.

In order to illustrate the point to which attention is now being directed, it will be worth while to indicate generally the objects for which the different modes of skilled examination are employed. The immediate purposes for which physical examination is intended clinically are to make out abnormal physical conditions of various kinds in connection with the chest or abdomen, or to recognise deranged physiological movements, especially those associated with the respiratory apparatus, the cardio-vascular system, and the alimentary canal. The more important secretions and excretions give valuable information, not only by their general characters, but also more especially by any chemical or microscopical deviations from health which they present. Morbid discharges often prove serviceable on similar lines. The more special modes of investigation are only applicable for particular purposes, and are intended to give some special kind of information, differing according to the nature of the case, and the part or organ which is under examination.

From what has been just stated, it may be readily inferred that not uncommonly different kinds of skilled examination not only reveal the fact that disease exists, and its seat, but tell us definitely what is its nature. More frequently,

however, the phenomena noted by these methods, if they happen to be present, are but elements or factors in the diagnosis, and they must be regarded along with, and in relation to, the history of the case, the existing symptoms, and other data, before a satisfactory opinion can be arrived at. It must be remembered, however, that in not a few instances they reveal nothing whatever, and afford no help, so that we have to rely entirely upon ordinary symptoms. This may happen even in cases where physical changes actually exist, usually recognised by definite signs, but these happen to be obscured, either on account of the situation or limitation of the lesion, or for some other reason; or circumstances preventing satisfactory examination being made. Further, thoracic or abdominal symptoms are not necessarily prominent or serious in proportion to the abnormal changes of this kind, as determined by physical examination, and the gravity of a case is by no means always to be measured by their extent or degree. Thus there may be but slight and limited signs, perhaps only to be detected on the most careful examination, or of a very indefinite character, while symptoms are marked, and such an association of phenomena may be highly suggestive, as exemplified by certain cases of early phthisis, acute pulmonary tuberculosis, and obscure malignant affections. On the other hand, it is not at all uncommon to meet with very obvious and extensive morbid changes, readily detected on examination, and yet symptoms are practically absent or insignificant. As has already been intimated, this may occur even in cases where it is immediately important to determine the conditions present, for the purpose of treatment; but often such conditions are not indicative of any active disease, but are either the effects of advancing age or other natural causes, the remains of some past mischief, or the results of chronic lesions of various kinds, which, of course, need to be recognised, but which cannot be influenced by any therapeutic measures, and in themselves may not be immediately dangerous or obviously injurious to the patient. It becomes, therefore, a matter of great consequence to determine the true meaning of any physical changes detected on examination, and not merely to ascertain that such and such changes exist. To take phthisis again as an example, limited and obscure pul-

monary signs, accompanied with prominent symptoms indicative of activity of the morbid process, constitute an infinitely more grave combination of phenomena than extensive and very evident chronic changes, with symptoms slight or absent, showing that the disease is quiescent, and that reparative processes have been in progress.

Another fact to be noted in this connection is that the same physical condition, yielding practically similar physical signs, may be of a very different nature from a pathological point of view. This is frequently exemplified by such conditions as consolidation of the lung, accumulation of fluid in the serous cavities, and enlargement of the solid organs. In the case of the urine also, the detection of unusual ingredients by chemical examination, such as albumin or sugar, has a very different significance and importance in individual instances.

The illustrations just given will suffice to enforce the necessity of invariably regarding all forms of special examination, and the phenomena they reveal, from a rational and comprehensive standpoint; and of only giving them their due value in the diagnosis of any particular case.

Gastric Crises.—Dr. Seymour Basch ('Archiv für Verdauungs-Krankheiten,' Bd. v, 1899) says that naturally in the early stages of locomotor ataxia, when the gastric crisis forms the only symptom of the disease, the diagnosis cannot be made with positiveness. In addition to this, the presence of at least two characteristic symptoms is necessary. Still, the typical gastric crises of tabes are also valuable for the diagnosis of this disease, since they are characterised by the following points:—(1) Entire absence of all symptoms of any organic disease of the gastro-intestinal tract. (2) Suddenness of the onset of the attacks. (3) Absence of initial chill. (4) Great intensity of the symptoms, which sometimes increase rapidly, at other times gradually, in severity. (5) Absence of fever, rapid pulse. (6) Absence of any local condition in the gastric region or of other factors which could explain the severity of the existing symptoms. (7) Absence of characteristic qualities in the vomit. (8) Absence of every influence upon the course of the affection by external circumstances. (9) Spontaneous abatement of the attacks. (10) Speedy convalescence.—*Medical Record.*

A CLINICAL LECTURE

ON

INGUINAL COLOTOMY.

Delivered at St. George's Hospital, May 30th, 1899, by

HERBERT W. ALLINGHAM, F.R.C.S.Eng.,

Assistant Surgeon to the Hospital.

GENTLEMEN,—The subject upon which I have chosen to give you a clinical lecture this afternoon is that of colotomy. Of course the subject is too vast to consider it in all its aspects in a lecture of this kind, and, therefore, I propose to-day to talk to you only about the operation of inguinal colotomy and the cases in which it can be performed.

In commencing a subject of this kind one must bear in mind that colotomy may be very much abused as well as of very great use, and before deciding to do a colotomy, one should have very good reasons for so acting, and not get in one's mind the idea that because a patient has ulceration of the rectum or stricture from whatever cause—syphilitic, malignant, tubercular, or dysenteric—a colotomy should be done straight away. It has been my lot on several occasions to see cases in which patients have been advised to have colotomy done for malignant disease of the rectum, in which, by a little judicious treatment, that is to say, the use of mild laxatives or the introduction of suppositories into the rectum, relief of pain and irritation have been procured, and they have been able to postpone operation and to go about perfectly comfortably. I have in mind a case, two years ago, in which a patient was advised to have colotomy done, and he still goes to town daily without that operation having been performed.

Now, the conditions which necessitate colotomy, —that is to say in the rectum, for I am only dealing with the rectum to-day—may be malignant disease, syphilitic ulceration, or stricture; and I may in passing remind you that syphilitic ulceration of the rectum, when it extends up the bowel, is as incurable as cancer; no amount of iodide of mercury seems to be of use in these cases. As the disease advances it is very often necessary to perform colotomy in order to save the patient's life and to make him more comfortable. Dysentery

is another condition that sometimes calls for colotomy, but that is rare, because in dysentery, as a rule, it is mostly an ulceration or congestion of the rectum, and if there is stricture connected with it, that is in most cases of the annular narrow variety, and can in a number of cases be treated by bougies or mere division. The same thing applies to tubercular stricture with ulceration. At times great benefit may be obtained by colotomising people with tubercular ulceration of the rectum, but one must bear in mind that, as a rule, the tubercular variety of ulceration attacks patients in the last stage of tuberculosis, so that all one can hope to do is to relieve them, by a well-planned colotomy, from the troublesome diarrhœa, pain, and discomfort, and to make their lives as comfortable as possible. Then there is the condition of ulceration and stricture for which a cause cannot be found. Some of you may remember a case in the Winchester Ward upon whom I performed colotomy. The patient was an old woman who had ulceration of her rectum with stricture. She had not had syphilis, and one could only conclude it was of an inflammatory nature. It had burrowed into the vagina and also into the pelvis, and she had extensive suppuration and fistula in the buttocks. In that case we hoped, by colotomy, to have done her a great deal of good. We did benefit her to a certain extent; but, as often happens in these cases when the fæcal matter, or rather the bile which is in the fæcal matter, ceases to pass through the rectum, the fistulæ and ulceration become extremely septic and the patients die of septicæmia. This woman did well so far as the colotomy was concerned, but died later on of a low, septic kind of inflammation of the buttocks. Post mortem we found that the colotomy was quite correct; there was no peritonitis; the colotomy wound was satisfactory, the parts were adherent, and there was no peritoneal infection.

The next point one has to consider is, when is colotomy called for? It is necessary when the case is one of acute obstruction, or when you find that the patient has great difficulty in getting the bowels to act.

Pain is a very important sign which you must bear in mind. If it is a case of ulceration with stricture, the patient may be suffering great pain, although there may be no very great obstruction.

and in order to rid him of his pain it is necessary to give morphia. But the danger of giving morphia is that you are likely to set up obstruction, which places one in a difficult position. When that arises, colotomy should be done in order that the relief of pain may be brought about. The same applies to bleeding. If we have a case of malignant disease of the rectum in which there is bleeding, which may be very difficult to stop, or which it is impossible to stop, then by diverting the fæces by colotomy, the bleeding may be checked and the patient's life prolonged and rendered more comfortable.

There is another symptom which necessitates colotomy, namely, diarrhœa. Often patients with ulceration and stricture of the rectum suffer from intense and troublesome diarrhœa; they will go to stool twenty to thirty times in the day, and the actions which they pass are not of any use; it is a spurious diarrhœa, the material passed consisting of only blood and slime, and perhaps a fæcal-stained discharge, but no true fæcal matter. Therefore you see that the things which necessitate colotomy are obstruction or approaching obstruction, pain when it is severe and cannot be subdued by morphia, bleeding, and extreme irritable diarrhœa.

If the patient is much distended there is often, on account of the distension, great difficulty in making a good spur, so the opening may be, for other reasons, as I shall show you afterwards, practically a failure, except that it relieves the obstruction; all that can be done is to draw the distended gut to the opening of the belly-wall, and insert a Paul's tube and fix the intestine to the abdominal wall. The result of an operation of that kind would probably be this, that a fæcal fistula instead of an artificial anus has been made. You will note that fæces will come from the intestine, some will pass out through the inguinal opening, but a large quantity of the motion will pass down to the rectum, and necessarily, as the result of that, there will often be great irritation of the growth, ulceration, or stricture for which the colotomy is done. Still, in cases of great distension, all one can do is to bring the intestine to the surface, cut a hole in it, tie in a Paul's tube, and stitch the intestine to the abdominal wall. Later on the tube will slough out.

When the patient is not obstructed, that is to

say not severely obstructed, and when the colotomy is performed for bleeding, diarrhœa, or pain, one should be most careful in obtaining a good artificial anus. By an artificial anus I mean the making of a good spur, so that *all* the fæcal matter will come up and pass out of the opening in the abdomen. In consequence of the spur, no fæces can find their way to the lower part of the rectum. When a good spur is procured you will find that the ulceration, malignant disease, or stricture is left perfectly quiet, and that is a matter of great importance, for, suppose the patient has come to you complaining of bleeding, pain, or extensive discharge, and you advise colotomy in order to relieve him of these symptoms, and a colotomy is done and no spur made, the patient will—and very rightly—grumble and tell you he is no better, as still fæcal matter passes by the rectum, which makes him just as uncomfortable as before the operation. Therefore, it is all-important that this spur should be perfect, especially where the patients may be reasonably expected to live long, or where the colotomy is done for pain or irritable diarrhœa.

With regard to the performance of the operation of inguinal colotomy, you have seen this on many occasions in the hospital. The first thing is to select the position in which the incision is to be made, and that is best done by dividing a line, taken from the umbilicus to the anterior superior spine, into three portions, and at the junction of the middle third and outer third, the incision should be made, running inwards and downwards for about one and a half to two inches in length. The next structure is the aponeurosis of the external oblique muscle, and that should be divided by a knife, and then after division of the fibrous aponeurosis of the external oblique I tease through the rest of the abdominal muscle with my fingers. With a little practice you can feel the structures give way under the fingers until you come to the peritoneum, which feels smooth. There are several advantages in tearing through the muscles in this way. There is little or no bleeding, and another advantage is that after the operation there is much better support to the intestine and to the abdominal contents than if the muscles were freely divided. On exposing the peritoneum, it can be picked up with forceps. Before opening the peritoneum I make it a rule

to take the picked up portion of the peritoneum between my fingers to make sure that there is no gut also picked up with it. If you take up the peritoneum with a pair of forceps you may have included a piece of intestine as well, but this is not possible if you carefully feel the structures with the fingers. When the peritoneum is opened you will find the fat of the great omentum ooze out of the wound in nine out of ten cases. At times there is little difficulty in distinguishing omental fat from subserous areolar tissue, but if you compare the two you will find that their colour is different; the areolar tissue has a darkish hue, whereas the omental fat has a white nodular appearance, bound up with small pieces of fibrous tissue. As soon as the peritoneum is opened the finger should be inserted.

The next step is to find the gut, and it is sometimes difficult, or appears difficult, to find the gut. But I think that this may be got over by bearing in mind the fact that the mesentery of the sigmoid flexure comes down from the gut, and is thus spread over the os innominatum; therefore the best plan is to pass the finger into the wound, slide it over the concave surface of the ilium, and the first piece of gut which you come across should be the large intestine.

What is too frequently done, thereby causing difficulty in finding the colon, is that the surgeon passes his fingers into the opening and gropes about in the middle line, consequently he is fingering the small intestine, the large intestine being tucked away in the cavity of the ilium. Occasionally the intestine is not lying in the concavity of the ilium, to which fact one must be alive; for instance, in these cases, where the sigmoid flexure has a very long mesentery, the gut might then be on the opposite side of the abdomen. I will tell you how to manage that. In such a case, if the gut is not found to be resting on the ilium and if after a careful search it cannot be found, make the abdominal incision much larger, so that you are able to pass your hand into the abdomen. The hand should be passed down towards the rectum and trace the rectum up, until the sigmoid is reached; or the hand may be passed up to the kidney and the descending colon found and traced down to the sigmoid flexure; or in some cases you may even go for the transverse colon, catch hold of a piece of omentum and pull it down, and as

soon as that is found you may trace it round and so get to the sigmoid. As happens sometimes, the colon may be bound down to the middle line of the abdomen. If that is the case, you will stitch up the transverse colon, and make a colotomy in the transverse colon instead of in the sigmoid. There is no excuse for not being able to find the colon, nor is there any in making a mistake as to what part of the intestine is the colon. No piece of intestine should be fixed up unless it has well-marked longitudinal bands. I have never yet seen a case in which longitudinal bands and appendices epiploides have been absent in the large intestine. There is no excuse whatever for making a mistake as to what piece of intestine you are fixing up to the wound, and no one should ever think of doing colotomy, whatever the condition of the abdomen, by fixing up a piece of intestine unless it has one or both of these characteristic features, viz. appendices epiploides, or longitudinal bands, or both.

When one has found the gut, the next thing is to fix it to the abdominal wall. Some time ago I used to sew the parietal peritoneum to the skin edge, for this reason, that we thought it prevented any drainage of material from the cut muscles on each side, or any little vessel leaking inwards into the peritoneal cavity. We know now, with aseptic surgery, that that is unnecessary, and not only unnecessary but disadvantageous. It is best not to stitch the parietal peritoneum to the skin for these reasons: the late Mr. Greig Smith, who was a very celebrated authority on abdominal surgery, made experiments, and found that if you unite peritoneum to peritoneum the adhesions are rather feeble. If you get peritoneum united to muscle and to skin the adhesions are very much stronger, and therefore you see it is an advantage not to stitch up the peritoneum; you get a better union between the gut and the abdominal wall than if you have gut united to peritoneum. As soon as the intestine is found, I think the best plan is to pull it out of the wound, so as to make a good loop, next to carefully find the mesentery with your finger and thumb. What I do now, as you saw in the case I operated upon the other day, is to pass a Spencer Wells clip through the mesentery, and let the clip rest on the abdominal wall. That prevents any possibility of the gut falling back into the abdominal cavity. We used

to put a stitch through the mesentery, but I have found that the stitch is not always safe. It will cut through, and if it cuts through in the early days of the colotomy the intestine will fall back. If it falls back you will fail to get a spur. You need to particularly aim at getting a good spur, and that is best done by passing a closed Spencer Wells clip through the mesentery. Some use a glass rod, but it is very likely to fall out in a few days; but the clip cannot fall out, and to make quite sure I secure it to the abdominal wall by putting a single stitch through the skin and round the handle of the clip which keeps it in position. After the gut is secured it is necessary to put a few stitches between the skin and the musculo-serous coats of the bowel. I pass a needle through the skin and pick up the gut, taking care not to perforate the mucous membrane of the gut. The needle only passes through the serous and musculo-fibrous coat. This stitching should be done at the upper and lower ends of the wound and at any other part around the skin wound where there seems to be an interval and where other parts of the intestine might be protruded by straining, or where some omentum might slip through after the operation.

The next point is when the gut can be opened. If the patient suffers much from flatulent distension, or is in great pain, there is no harm in opening the gut in twelve hours' time. You will find by twelve hours that there is a sufficient amount of lymph thrown out to seal up the opening in the belly. But it is better, if possible, to keep the patient quiet by opium, and not to open the gut for two or three days.

With regard to the way in which the intestine should be opened, what one does is to take hold of the gut and make a small incision in a transverse direction. In making it in the transverse direction there is no bleeding, because the vessels run round the gut and not in its longitudinal axis; the nerves are also avoided, so that there is little bleeding or pain. The incision should be half to one inch in length, which will be found to be quite sufficient. Through that opening flatus can pass, and a certain amount of motion can leak out. At the end of ten days I take a pair of scissors and divide the gut right through down to the clip. By so doing one practically divides the gut in half. By dividing the gut down to the clip, the

clip is freed. The incision should be made at right angles to the gut. We used to make longitudinal incisions in the gut, but by a longitudinal incision a large quantity of small vessels were divided, and several required securing. I daresay those who saw my case in the wards noticed that when I cut the gut across it fell apart, and we obtained an excellent spur, and, in fact, left a double-barrelled opening. There was no pain, and certainly no bleeding when the gut was divided. I wish to impress upon you the enormous importance of obtaining a good spur in these cases. If you fail in procuring a good spur the patients will grumble at their operation, and rightly so, because some only of the motion (which ought all to pass out at the abdominal opening and so leave the growth or ulceration and stricture quite alone) passes out and a large quantity passes down to the anus, and consequently irritates the rectal disease, causing pain and discomfort, from which they hoped to be relieved by the colotomy.

The instruments which are used in these cases are very simple, the fewer the better. All that are required are a small knife, a few clips, a pair of scissors, and, if you like, a retractor. I tried to get some cases to show you, but I find that in this hospital I have not done many simple colotomies. Most of the operations you have seen me perform have been abdominal explorations that ended in colotomy, or they have ended in my being able to remove the growth through the inguinal opening. But, as I told you at the commencement of this lecture, I confine my remarks to colotomy for diseases of the rectum and that alone.

Some surgeons say, why not at the operation divide the gut right through, stitch up the upper end and drop the lower end in? It is certainly very dangerous to close up the lower end and drop it into the abdomen. In such cases I have seen it happen that morbid material has accumulated between the sewn-up part and the growth or structure, and a large abscess has formed in this place, and has either burst into the peritoneum, or the patient has become septic from the retained matter. If you obtain the two openings I have described, it is possible to wash out these materials either from the rectum or from the lower of the two openings in the inguinal region.

I show you specimens of well-marked spur

and double-barrelled opening; in the next bottle is a specimen where there has been a colotomy performed without making a spur. In the lecture I have made a great point of the importance of the spur, for I have seen in my own practice, now numbering over three hundred inguinal colotomies, how very unsatisfactory for many reasons the operation is unless a good spur is obtained.

Tubercle of the Testicle in Childhood.—The 'Journal de Clinique et de Thérapeutique Infantiles' of May 4th contains a report of M. Felizet's observations on fifty-eight cases of tubercle of the testicle in childhood. From these it appears that the disease almost invariably attacks this organ in children under seven years of age. As in adults, the epididymis is by far its most usual place of origin, the cord is less often invaded, the prostate, the vesiculæ seminales, and the bladder still less frequently. Hydrocele is rarely present, and the course of the disease, as might be expected in tissues which are virtually embryonic, is often rapid, infection proceeding not only by the spermatic blood-vessels, but by the inguino-iliac lymphatics also. M. Felizet is not an uncompromising advocate for castration as a remedy, but is disposed up to a certain point to rely on hygienic and medicinal measures. Even when there is adhesion of the testicle to the scrotum and subsequent abscess formation, he is content to employ local conservative methods. When, however, in addition to suppuration there are present the signs of general impairment of health, he advocates the immediate removal of the gland as the only means of preventing a very rapidly fatal form of general tuberculosis. Unfortunately we are not informed of the results obtained by treatment in these fifty-eight cases. If they should hereafter be forthcoming, they ought materially to aid a decision as to the true indications for castration in the infantile variety of this disease. M. Felizet contends that the condition of rapid tissue development is not favourable to the resistance of an infective process, and in that case the stage of hygienic treatment and local conservative surgery must be a period of watchful care and not be too prolonged. Many authorities consider that in the adult excision of the testicle offers the best hope of cure; and we are still in want of proof to show that the case of children is materially different.—*Tri-State Medical Journal*, June, 1899.

DISCUSSION ON
THE RELATION OF GOUT TO RHEUMATOID ARTHRITIS,

AT MEETING OF

THE NORTH-WEST LONDON CLINICAL SOCIETY.

Dr. EWART, having opened the discussion, was followed by Dr. Luff, who said it seemed to him that if the discussion on the part of the various speakers was not to be confined to a very few words—a dozen words or so—it was necessary for each speaker to define, at the commencement, what he meant by rheumatoid arthritis, because he thought there was a great divergence of opinion amongst various medical men as to what rheumatoid arthritis really was. By rheumatoid arthritis he understood a disease entirely different from rheumatism, entirely different from gout, a disease which might occasionally overlap one or the other, but which was an absolutely distinct disease, a disease which, to put it briefly, was characterised generally by its polyarticular nature, by the extreme amount of deformity which, in the very chronic stages, occurred in connection with it, and by some nervous phenemona which, in his opinion, occurred simply as sequelæ of the affection. Of rheumatoid arthritis he recognised two kinds, i. e. acute rheumatoid arthritis, which was a rare disease, and which he had little hesitation in saying had never been recognised as an entity until the last few years, having been always mistaken for acute or subacute rheumatism; when it did occur it was in children or young adults. The second variety was the chronic, and that was far and away the commoner one. The chronic form was an affection which might occur *per se*, or it might be secondary to the acute condition, though that was exceptional. It might also occur as a sequela of some chronic joint affection, such as rheumatism, gout, gonorrhœal synovitis, or gonorrhœal arthritis. He believed the first physician who recognised rheumatoid arthritis as a distinct disease was Hebden, who very graphically described the distinctions between it and gout. He pointed out that there was not great pain, and that there was not that redness which the gouty joint displayed,

that the first joint of the big toe was not likely to be attacked first, that there was considerably more weakness present in the disease than in gout, and that when the joints were once affected in rheumatoid arthritis they were permanently affected, whereas in gout recovery might take place.

Before actually discussing the relationship, which he thought was very little, between rheumatoid arthritis and gout, he would dwell for a few moments on the views as to the origin of rheumatoid arthritis. The first view accepted by some was that the disease had a nervous origin, that is, that it was due to some affection of the central nervous system. He believed the reasons for holding this view were, mainly, its polyarticular nature and the symmetrical distribution of the affection. It was well known to them all that when rheumatoid arthritis affected the small joints of the hands and fingers it was remarkably symmetrically distributed. This fact he was always pointing out to students. Another reason for this view was the muscular atrophy which generally attended rheumatoid arthritis. He was not himself a believer in the nervous origin of the disease, for the following reasons:—Firstly, if it were due to any central nervous affection, this affection of the joints must be due to abnormal trophic changes; he thought a little consideration must show that it was not possible for these changes, extensive as they were, to be due to abnormal trophic changes; secondly, if it were due to a central nervous affection, there must be found, post-mortem, signs of that central nervous affection. As a matter of fact, those signs were not found, except, perhaps, in a very few exceptional cases, which might be counted on the fingers of one hand, in which degenerative changes in the large cells of the anterior cornua had been found. Again, on the same supposition, the reaction of degeneration would have occurred, whereas it was never known to have occurred in the disease,— at least, he did not know of a single recorded case. Moreover, muscular atrophy, upon which so much stress had been laid by writers, was common to all chronic affections. Where there was disease there must be wasting of the muscles involved, and there must be the reflex disturbance which occurred when any joint was affected, and which must react upon the muscles.

The other view to which he wished to refer was

the infective view of this disease; there they had mainly to thank Drs. Bannatyne and Wohlmann for their researches, although he thought that before giving any actual adherence to that view they must wait for further evidence. The reasons for acceptance of it were, in the first place, Bannatyne and Wohlmann had described a specific micro-organism in the tissues and the joints and in the blood of persons suffering from rheumatoid arthritis; the points in which those investigators had failed to absolutely prove the matter was that they had not been able to produce a similar disease in animals experimentally; still it was quite intelligible that they might have failed in that respect. Rheumatoid arthritis frequently occurred as a sequela to other infections diseases, which was another reason for it being regarded as an infective disease. It occurred as a sequela of acute rheumatism, gonorrhœal synovitis, and also of infective affections of the gastro-intestinal tract, and also of those various infective diseases which furnished a lesion through which the micro-organisms could gain access to the circulation, and so to the joints. Again, in connection with rheumatoid arthritis, various nervous symptoms occurred, as was well known to them all, and yet no nerve lesions were found post-mortem to account for them. The only explanation he could give was that they were due to toxic action. If due to toxic action he could only conceive rheumatoid arthritis as an infectious disease, and that by reason of the micro-organisms the toxin was discharged into the circulation, and by affecting the nervous system produced the various nervous symptoms.

With regard to the acuter forms of rheumatoid arthritis, he considered endocarditis and pericarditis as fairly common sequelæ or complications, occurring, as far as his own experience went, in a fifth of the cases. He believed Bannatyne stated he had seen these sequelæ in 17 per cent. of the cases. Lastly he would say that the polyarticular character of the disease was an indication that it was most probably an infective disease. Surely that polyarticular character could only be explained in one of two ways: either it was due to some nervous affection, or else it was due to some infection. He did not consider it due to a nervous affection, but he did consider it due to an infective disorder, for the reason that

acute arthritis nearly always started in one joint— (if due to the nervous why should it start in one joint only, namely, the metacarpo-phalangeal)— and then rapidly flew to the other joints.

Now to come to the question of the relationship between rheumatoid arthritis and gout. They seemed to him to be diseases which were so remarkably distinct, so far apart from one another, that he thought it well to recapitulate the distinctions:

Rheumatoid arthritis was most common in females; gout in males.

Rheumatoid arthritis occurred amongst the poor, the badly nourished, and the debilitated. Gout generally occurred not entirely but specially amongst the rich and overfed and amongst robust individuals.

Rheumatoid arthritis was a disease in which the diet must be good and highly nutritious for success in treatment. In gout the diet must be very modified, and must not be highly nutritious or seasoned.

Rheumatoid arthritis was of very insidious onset, generally commencing in one joint and flying to others afterwards. Gout was of very obvious onset, beginning with great rapidity in one joint.

Rheumatoid arthritis generally began in the hand, gout in the foot.

. In rheumatoid arthritis the pain was very slight at first, whereas in gout it was acute.

In rheumatoid arthritis, if it began in the hand, as it generally did, the hand was cold, blue, clammy, and moist on the palmar surface, and there was that remarkable pigmentation about the body, a point which he thought was not sufficiently noticed by writers on rheumatoid arthritis. Rheumatoid arthritis could often be recognised, in its early manifestations, by its peculiar pigmentation, beginning generally on the forehead, both eyelids, and often on the backs of the hands and forearms and legs. These freckle-like appearances might more or less run together, giving the appearance of brownish or dirty-looking pigmentation marks, never found in connection with gout. He considered this point of immense diagnostic value in the early stage. Rheumatoid arthritis was a remarkably symmetrical affection of small joints, but this feature was not present in gout. Grating was very common in rheumatoid arthritis; it occasion-

ally occurred in gout, but was not of such common occurrence in that disease. In rheumatoid arthritis, joints once affected were, in his opinion, permanently affected; he thought the condition might be relieved but not cured, whereas in gout cure was possible. In rheumatoid arthritis the temporo-maxillary joints were commonly affected, and he looked upon that as a most important point in diagnosis, as they were never affected in gout, so far as he knew. In rheumatoid arthritis nearly all the cases were anæmic in a remarkable degree; he quite agreed with Bannatyne's statement that 95 per cent. of the cases of rheumatoid arthritis showed marked anæmia, but that was quite exceptional in gout. It was a peculiar form of anæmia, because the red corpuscles were not very diminished in quantity, but were very deficient in hæmoglobin, and there was an increase in the number of white corpuscles. Again, the blood in gouty persons was charged with uric acid in some form or other, either a quadriurate or a biurate, whereas in rheumatoid arthritis this was not present. Again, treatment which was efficacious in one disease was useless in the other, and *vice versâ*, that which was helpful in one was harmful in the other.

Had they any relationship with one another? Mr. Jackson Clarke told him the other day that when he was conducting post-mortem examinations, of which he had conducted a large number when pathologist at St. Mary's Hospital, he occasionally came across undoubted cases of rheumatoid arthritis with marked erosion of the joints and abrasion of the ends of the bones, and a deposit of sodium biurate in the cartilages. In that respect, therefore, it seemed there must be some relation between rheumatoid arthritis and gout. His view was that in all such cases the gout occurred first, and the rheumatoid arthritis as a secondary matter, because anything which tended to weaken a joint, or to interfere with its nutrition, undoubtedly tended to produce rheumatoid arthritis, whether the joint was injured by a previous attack of rheumatism, or a previous attack of gout, or a previous attack of gonorrhœal synovitis, or where there was a predisposition in the joint to the development of rheumatoid arthritis. Therefore in these cases he thought the connection was simply that the gout attack came first, and that before the removal of the

sodium biurate the rheumatoid arthritis developed. He thought the two diseases were distinct, even when they occurred in the same individual. He thought the idea of any relationship existing between the two diseases had arisen from the unfortunate name "rheumatic gout." He took it that the majority of cases of so-called rheumatic gout were cases of gout, the remainder being rheumatoid arthritis.

With regard to a case of doubt between gout and rheumatoid arthritis, he considered it should be treated as one of rheumatoid arthritis. If they always followed out that rule he did not think they would have cases hanging so long on their hands. Fortunately they had one form of local treatment which was, to a certain extent, equally beneficial in the two diseases, namely the local hot-air treatment.

Dr. HAIG said the subject was a very large one, and at that late hour he would go straight for his points. He took an almost exactly opposite view to that of the last speaker. Considering the identity with rheumatism, or, as he would say, the identity of rheumatoid arthritis with rheumatism and with gout, because he took it that rheumatism and gout were identical, that they were both due to uric acid, and that rheumatoid arthritis was a third modification, also due to it. He thought there were behind what they called rheumatoid arthritis, several conditions which they did not really understand thoroughly. He took the view that rheumatoid arthritis and gout were manifestations of the same disease, produced in the same way, only under slightly different conditions. Garrod told them that he suggested the name rheumatoid arthritis about 1858, and in his work on the subject he mentioned a case somewhat as follows:—A severe general progressive arthritis associated with debility. If the debility could be removed, the joint disease improved or disappeared; the patient got up, but a certain amount of crippling was left. It had been admitted that arthritic changes, clinically indistinguishable from those in the above form of disease, might and did occur along with the presence of visible urates, either in the joints or tissues or skin, and various theories had been advanced to explain what that association was between the visible urates constituting gout and the arthritis which has been called rheumatoid arthritis. That was the central

subject which they were discussing. What had been suggested was that it was more or less an accident their being there, that the uric acid had nothing to do with the causation of this arthritis called rheumatoid, but that there was gout first of all, that the gout caused the deformity of the joint, and that rheumatoid arthritis supervened on top of that.

Dr. LUFF said: As an occasional complication.

Dr. HAIG said he quite understood that. It had been the habit of those who talked of rheumatoid arthritis as a separate disease, to say that in the joint changes in rheumatoid arthritis no urates were to be found. He had seen patholo-gists in the dilemma that the joints of one side of a body contained rheumatoid changes without urates, while the joints on the other side of the body contained rheumatoid changes and urates; one set of joints rheumatoid, the other gout. If a certificate had to be written out in such a case, what would be assigned as the disease? Would they call it rheumatic gout, or rheumatoid arthritis, or gout? He thought in many cases they would look to the fact that they found rheumatoid arthritis definitely associated with urates in the joints, and they would call it gout, and that in all cases the irritation was due to the presence of urates. But it was at once said, " Look what a different disease is this rheumatoid arthritis;" it had been said that night that it occurred in women, often in young women, in association with anæmia and debility, so different in every way from gout, which latter disease was associated with plethora, ruddy colour, and later age. He ad-mitted the differences, but they were not sufficient to show that the irritation produced by uric acid was not the cause of the arthritis in both cases. The very effect of the debility was to flood the blood with uric acid, especially when that debility occurred in the case of meat-eaters and tea-drinkers. In a person who had been a meat-eater and tea-drinker, and who became, from any cause such as prolonged lactation, feeble and debilitated, the urates washed out of the joints into the blood, as he believed; at any rate such subjects passed an excess in the urine, where its presence could be demonstrated. That was the condition in which Garrod told them the disease called rheu-matoid arthritis originated, and as long as that condition of debility remained the disease pro-

gressed, because the joints were constantly irri-tated by the urates brought to them in the blood; but if the patient got into a better condition, the urates were no longer dissolved in excess in the blood, the irritation of the joints ceased, and the patient got better. That was the story as told by Garrod, and that was his (Dr. Haig's) explanation of it.

He considered the treatment of rheumatoid arthritis by giving full diet was perfectly good, because it raised the acidity of the urine and cleared the excess of uric acid out of the blood, and tonic drugs had the same effect. The salicy-lates relieved acute rheumatism extremely well, they relieved chronic rheumatism much less, and they did not relieve some cases of chronic rheuma-tism at all. He had shown that conditions of chronic rheumatism were unfavourable to their action as solvents of uric acid. Salicylate acted best where there was an acute febrile condition. Some years ago he saw at St. Bartholomew's Hos-pital a case under Sir Dyce Duckworth, a woman who had well-marked rheumatoid arthritis with occasionally a little temperature. She was put upon salicylates, and considerable surprise was expressed at the drop in temperature and relief of her pain. The fact that salicylate of soda failed to relieve rheumatoid arthritis did not show it was not due to uric acid, but merely that the condition of the system was not favourable to the solvent action of salicylates. They had all probably noticed that some (especially subacute) cases of rheumatism did not do so well on salicylates in the summer as in the winter. Some practitioners in India had gone so far as to say that the arthritis they met with in India could not be rheumatism, because salicylates did not relieve; but even in this country, if the patients were kept too hot and they were made to perspire, salicylates would not cure the disease. In summer, therefore, he kept the patients as cool as possible, and if that failed he gave them acids, diminished the bedclothes, and cooled them in every possible way. The absence of urates from a rheumatoid joint in the post-mortem room did not show that urates had not been there. If the patient died slowly from wasting disease with debility, urates would have passed from the parts where they could previously have been detected. Among cases which Dr. Savill kindly showed him in the Paddington In-

firmary, there were three diagnosed as "chronic progressive articular rheumatism." They all came to an end, and in two of them urates were found in the joints, and none in the third case. In the case in which none were found, the patient had been absolutely bedridden by the disease and had been in an asthenic condition for a long time, during which the urates were passed out in the urine. Otherwise he thought they would have been found. When he looked at a case of arthritis he did not ask was it rheumatism, or rheumatoid arthritis, or gout, but whether it answered to conditions affecting the solubility of uric acid. If it did not, he looked for other causes—tubercle, pyæmia, new growths, traumatism—which might for some time simulate the arthritis of uric acid.

If the arthritis was due to uric acid, drugs that influenced its solubility, and so the quantity in the joints or blood, would produce distinct effects; in arthritis due to other causes they would not do so; and he looked upon this as the best test to found a diagnosis.

Acute arthritis of uric acid is relieved by salicylates, except in hot countries, or during very hot weather in this country.

Chronic arthritis of uric acid with debility is relieved by tonics and full diet, which clear uric acid out of the blood, and combat the debility, which would tend to keep it in the blood. If the debility cannot be relieved, the arthritis continues.

(To be continued.)

Vascular Anatomy of the Bladder.— Keiffer has examined a number of injected specimens of the urinary bladder, and calls attention to the remarkable vascularity of the submucous layer of the neck of the bladder. He believes that simple vaso-motor changes may regulate the permeability of the passage from the bladder to the urethra, independently of muscular contraction or relaxation of the vesical muscular fibres at this point. As emotion, heat, or cold may cause micturition, it seems to the writer reasonable to suppose that their action is primarily upon the vaso-motor system, and secondarily upon the muscular.— *American Journal of Obstetrics*, June, 1899.

MEETING OF THE SOCIETY OF ANÆSTHETISTS,

At 20 Hanover Square,

Dr. DUDLEY BUXTON in the Chair.

(Concluded from p. 208.)

Mr. Low said he had to make a short communication on a case of epileptiform fit occurring during anæsthesia, which, he believed, was rare in a patient who had never had any history of epilepsy at all. His object in bringing the matter before the Society was to hear whether there was any suggestion as to the cause of it. On October 29th, 1898, a female, aged forty-five, was very ill from acute appendicitis. She was too bad to operate upon at the time, and the surgeon delayed the matter for a few days. Pus formed, and a lateral incision was made, letting out the matter, but not doing any radical operation. She was very ill at the time and had had tremendous pyrexia; she was also very alcoholic. He gave gas and ether, and kept up the anæsthesia with ether and oxygen. The anæsthesia was perfectly normal for half an hour, and then all of a sudden he noticed that the pupils became widely dilated, and the breathing exceedingly deep; he therefore stopped the administration, thinking that the patient was becoming too deeply anæsthetised. Still, the colour did not become blue, such as occurs in an ordinary simple anæsthesia. She had some twitching of the eyelids, and he called the surgeon's attention to the condition. He immediately stopped operating, and she went right through the epileptic fit, the fit having started in the left thumb and spread up the left arm, which then, together with the left leg, was drawn to the opposite side. After two or three minutes the operation was continued, the patient being in such a condition that it was necessary for the operation to be finished as quickly as possible, and he went very carefully on with the anæsthetic. During the remainder of the time she had a series of slighter fits, the breathing remained deep and the pupils widely dilated. The operation was finished in a

quarter of an hour, and she was put back to bed. She then got into a condition of having, as it were, slight attacks, simply twitchings of the muscles of the face, with the pupils widely dilated, and she did not come round from the anæsthetic for half to three quarters of an hour after she had been put to bed. There was no history of any epilepsy in her or her family; the husband was very carefully interrogated about that. The surgeon became very anxious when this fit came on, because of the septic condition of the patient; he feared she had some serious septic focus in the brain. The subsequent history of the case showed that there was nothing of the sort. After coming round· from the anæsthetic she never had any real re-currence. What one would like to know was what part was played by the anæsthetic. Was the seizure a true epileptic fit, or was it the convulsive condition which one often sees in a patient under gas, the patient becoming perfectly rigid, with the hand doubled up under him? Personally, he did not think the patient was deep enough under the influence of the anæsthetic for it to be that. Of course, it was strange that an epileptic fit should come on suddenly in a woman aged forty-five with-out any history of such, and one would have thought that the anæsthetic would have had rather a beneficial effect than otherwise. He remem-bered a somewhat similar phenomenon in a case at St. Thomas's Hospital, but that was in a known epileptic. After he had been under the influence of the anæsthetic for fifteen minutes he had a slight fit; he was known to have had many epileptic seizures previously. Was the case he had related likely to be true epilepsy, or was it some toxic conditon due to the anæsthetic?

The PRESIDENT said the communication was of singular interest, and perhaps some of those present might be able to throw light upon it. He had himself never met with a case at all com-parable with that narrated. He would like to ask whether uræmia could be eliminated from the case, and, secondly, whether Mr. Low was con-vinced in his own mind that the case was not one of those in which epilepsy was present, but was overlooked? They knew quite well that people might have epilepsy for years without it ever being recognised. The present patient, being a married woman, any night attacks would be known by the husband, and therefore the usual explanation

would not hold in that case. But the matter was one of great importance.

Dr. TURNEY said he did not think he could give any explanation. The possibility of a very slight focal lesion did suggest itself, the attack having begun locally. One might get an ordinary epileptic attack, starting in one thumb or any-where else, but when the patient was under an anæsthetic one could not detect the ordinary criteria of Jacksonian epilepsy. Possibly the seizure might have been a Jacksonian fit, as a result of a small hæmorrhage in the centre con-cerned. Of course the long time which the patient took to come round after the anæsthetic would fit in with either theory, either that it was ordinary epilepsy, or a focal lesion. He would not like to express an opinion on that point.

Mr. PATERSON said it seemed to him that the chief difficulty in accepting this interesting case as one of true epilepsy was the fact mentioned that there had been no previous history of epilepsy in the subject. Of course it might be that there was epilepsy present which had been overlooked, as suggested by the President, but that again was unlikely, in view of the fact which had also been referred to by the President, that she was a married woman. He was under the impression that no case had been recorded in which epilepsy had developed in such an old person without there having been a previous history of it. He would like to hear Mr. Low's opinion about that. A much more likely explanation seemed to be that there was focal irritation in the brain, possibly brought on by the fact that the patient had an anæsthetic. The only case he had seen which was at all comparable to it was a small boy to whom he was giving gas and oxygen. During the administration, which had lasted ten minutes, he was seized with a very violent convulsion, begin-ning in the arm on one side, and rapidly extending over the whole body. He got into a condition of rigid opisthotonos, with widely dilated pupils, and he had a violent convulsive attack. On thinking it over he came to the conclusion it was a case of convulsion brought on by excess of oxygen, and then he remembered that at the time he changed one of the bottles in the gas stand, and during the time he was occupied in the changing he allowed the oxygen bag to be slightly distended, and the patient undoubtedly had an excess of oxygen. On

looking up the subject he found it had been shown that inhaling oxygen under pressure would produce violent convulsions. He would like to ask Mr. Low whether, in his case, he could eliminate that fact, possibly the patient had been inhaling oxygen under slight pressure.

Mr. Low, in reply to the President's remark, said he could not personally say what was the condition of the urine, because he only saw the patient at the administration for the first time. But he would take it that she certainly had albumen in her urine. She was very severely ill, and she had had high temperature, which had been ranging in the typical pyæmic way over four degrees. and had done so for some little time. He could not say whether she actually had uræmia or not. As to the latest age at which epilepsy might first appear, he was not particularly well versed in the books on that matter, but he remembered a case when he was clerk at St. Thomas's Hospital in a young man aged twenty-eight or thirty. The history was that the patient lived in the north of London, and was suddenly taken with an epileptic fit, which terminated in epileptic mania. The doctor who was called in had an idea that there was a strong room at St. Thomas's, and accordingly brought him all the way to that hospital in a cab, during which journey the doctor was very severely handled by the patient. He was taken into the hospital, and on waking up at three o'clock in the day, he knew nothing at all about what he had gone through. Dr. Hawkins made very careful inquiries, but could find no history of epilepsy in the patient or his family; therefore if it could appear for the first time in a man aged thirty, he did not quite see why it should not in one of forty-five. As to the oxygen being a causal factor, it did cross his mind that there might have been too much oxygen administered, but certainly no oxygen was given under pressure, it was simply flowing out of a Bird's bottle with a Bird's regulator, which caused a very narrow stream. Therefore the percentage of oxygen must have been very small, because of the minuteness of the stream of it which ran into the bag. His own view was that it was a true epileptic fit, that it was really a functional condition, and he brought it forward as a complication during operation and not as a case due to the anæsthesia itself. He did not think the patient was deeply enough under

to class it with the cases which resulted in starving the brain, such as in carbonic acid poisoning and so on.

The PRESIDENT said they had come to the end of the work for the evening, and also for the session. Before the meeting dispersed he thought they should accord to Dr. Turney and to Mr. Harold Low their thanks for their communications, which had been of singular interest. There was no necessity for him to prolong the meeting except to thank the members of the Society for the courtesy and support which they had given to him during the two years that they had tolerated his presence in the chair. Those had been years of great instruction to him. Whilst presiding over them he had learnt very much in a most agreeable way, and it afforded him the greatest pleasure to thank them and the Society generally for the honour they paid him when they put him into the chair, and for the many valuable lessons they had taught him while he occupied it. The Society was still young, and perhaps might not be any the worse for his wishing it many happy returns of the present session, much good work, many zealous workers to carry on the traditions which had been brought into being during the last few years. It had been rather their vogue not only to work amongst themselves but to get the best of the outsiders to come amongst them and tell them those things which they knew so well, and upon which members of the Society might know so little. As an example he might instance the paper of that evening. Had it not been for the kindness of Dr. Turney, many of them would have ended this session with a very indistinct and imperfect knowledge on the subject of post-anæsthetic paralysis. He might mention the names of many others also who had during the past year come to them and brought good metal, coined in their own particular mint, and stamped with the impress of their individual genius, which must pass current among them for their use and for their enrichment for many years.

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NOTICE.

A CLINICAL LECTURE

ON THE

EARLY DIAGNOSIS OF CANCER OF THE UTERUS.

Delivered at the Charing Cross Hospital, June 8th, 1899,

By T. W. EDEN, M.D.

GENTLEMEN,—It is well known that the results of
the operative treatment of cancer depend to a
great extent upon two considerations. They
depend in the first place upon the stage to which
the disease has advanced, and in the second place
upon the anatomical relations of the organ which
happens to be affected. The earlier the stage at
which the disease is recognised the better is the
chance of the operation resulting in a permanent
cure. But the second consideration is equally
important. For instance, in mammary cancer a
sweeping operation can be performed, and, in
addition to the breast, you can remove the first
chain of lymphatic glands and the vessels which
run to them. In the case of the uterus, the
relations of that organ to the bladder and ureters
and rectum render it impossible to perform such
a wide and sweeping operation as, for instance,
Halstead's operation for carcinoma of the breast,
simply because these important viscera must not
be injured. Another point is that the lymphatic
glands which receive the lymph stream from the
uterus lie deeply in the pelvic cavity at the sides
of the sacrum, and higher up in the abdominal
cavity, at the sides of the spinal column. These
glands are inaccessible to ordinary clinical exami-
nation, so you cannot tell whether they are en-
larged as the result of cancer or not. And not
only so, but if you were able to recognise these
enlarged glands you could not remove them by
operation, on account of their relations to other
important structures. These anatomical points
partly explain the fact that the permanent results
of operation for cancer of the uterus are not very
satisfactory. The mortality attending the opera-

tion is of course small, but the proportion of recurrences is large, and the reason is, in the first place, that the disease is seldom diagnosed early, and, in the second place, that there are special anatomical difficulties to encounter in removing it. Anatomical dispositions we cannot alter, but the diagnosis of the disease is within our reach, and this is the point we have specially to consider.

There are two reasons why the disease is not usually recognised early. In the first place, it does not give rise to any very characteristic or obtrusive symptoms, and, in the second place, when symptoms do occur, they are often concealed by the patient. There is also another point, and that is, that, even when patients do complain, they may object to a vaginal examination being conducted when the reasons seem to them to be insufficient. The result is that the medical man to whom they go is content with ordering them a bottle of medicine and a vaginal douche, whereas, as a matter of fact, the case is one which ought to receive the most careful and complete local examination. I am afraid that many cases of cancer of the uterus are missed from the fear of the medical man doing violence to the delicacy of his patient's feelings and not examining under circumstances which really call for a local examination. If the results which attend hysterectomy for cancer are to be improved, they can only be improved in this direction, by the patients coming into the hands of the gynæcologist at an earlier stage than now is usual. I do not suppose that ten per cent. of the cases we see in hospital and private practice are operable cases, that is to say ninety per cent. of them come up at a stage when nothing can be done except partial removal of an advanced growth. It is better to examine in twenty cases and find no disease than to miss a single early case of cancer.

I do not propose to say much about the pathology of cancer of the uterus, but there are one or two things which one must say about it. The disease may occur either in the cervix or in the body; it is usual to divide the cervix into two parts—the supra-vaginal and the vaginal cervix. The vaginal portion is that portion which projects into the vagina, and the supra-vaginal portion is that which lies above the reflection of the vaginal walls, and below the level of the internal os. The vaginal part has two separate and distinct kinds

of epithelium. The surface which faces the vagina is covered with stratified epithelium, and the cervical canal is lined by columnar-celled epithelium, the two meeting at a point which represents the external os. If you have cancer affecting this part of the cervix you see that you may get either epithelioma or columnar-celled carcinoma. Arising in the supra-vaginal portion you can only get columnar-celled carcinoma, for it has no covering of stratified epithelium. In this respect the body of the uterus is the same as the supra-vaginal cervix.

We will take cancer of the cervix first. The first thing to remember about cancer of the cervix is that it is a disease of parous women; not more than one per cent. of the cases occur in women who have borne no children. The disease is one of the penalties of child-bearing, but the ætiological relation between child-bearing and cancer is not made out. Labour is a frequent cause of injuries to the cervix, which in turn lead frequently to chronic inflammatory changes and the familiar condition known clinically as erosion. In other parts of the body it is recognised that injury and chronic irritation are predisposing causes of cancer, and the same may be true of the cervix. Another important point to remember is that cancer is by no means confined to elderly women; you may find it at any age from twenty onwards. One or two rare cases have been recorded in women under twenty. The earliest age at which I have seen it is twenty-six, and probably one third of all cases occur under the age of forty. It is therefore very important to remember that you cannot ever exclude the possibility of the occurrence of cancer of the cervix by the youth of the patient.

The symptoms to which the disease gives rise in the early stages—and I am only speaking of the early stages of the disease this afternoon—are unfortunately not pathognomonic; there is nothing about them which is characteristic. When you think of it, the range of gynæcological symptoms is not wide; there are only a certain number of symptoms which can possibly be directly due to diseases of the pelvic organs, and these are liable to manifest themselves time after time in varying forms and combinations in a way which is perplexing to men who form their diagnosis from symptoms rather than from physical signs. You get

patients coming with pretty much the same story in all sorts of different diseases, and even without any disease at all. But you may say that there are two at any rate, and perhaps three symptoms which should lead one to suspect that cancer may be present, but that is all you can say; you can never diagnose cancer or any other pelvic disease from symptoms, all you can say is that the symptoms are suspicious.

First of all, there is hæmorrhage; this is an extremely frequent symptom in women's diseases, but the hæmorrhage which you meet with in the early stages of cancer presents some peculiarities. In the first place, it is not menstrual hæmorrhage; the cervix takes no part in the menstrual function, and therefore there is no reason, à priori, why disease of the cervix should affect that function. Women with cancer of the cervix do not, as a rule, complain of menorrhagia. The hæmorrhage is irregular, and, as a rule, it is slight; it is very rare to meet with severe hæmorrhage when the disease is early. It is liable to come on either spontaneously or from very trifling causes. The patient may notice that when she rises in the morning there has been a little bleeding during the night. Or, on making careful inquiry, one may find that one of the first things the patient noticed was that there was a little bleeding after coitus. Naturally patients seldom volunteer information on this head, but it is a symptom which can never be disregarded. It is not pathognomonic of cancer; it may occur from cervical polypus, or even a bad case of erosion; but it indicates plainly that there is something wrong, and a local examination should certainly be always made. Women who are accustomed to use the vaginal douche may tell you that passing the nozzle causes bleeding, or they may notice that the water is blood-stained as it comes away. Again, the act of defæcation, especially if constipation be present, or a little unusual exercise, such as walking, may be enough to cause hæmorrhage. Bleeding from such trifling causes is always sufficient to make you look upon the case as one of gravity.

There is another symptom which is also of importance, and that is a watery discharge. Now, of course, everyone knows that a stinking discharge is one of the signs of cancer, but you do not get this except in late stages. In the early stages of the disease the discharge has no odour,

and that is a very important point to remember. Until the growth begins to necrose there is no offensive odour to the discharge. When the growth begins to break down and the atmospheric organisms gain access to it, putrefaction is set up and the discharge becomes stinking. At first it is often irritating, thin, watery, and profuse, and slightly coloured, but not blood-stained. It may cause soreness and irritation of the vulva. Now, cancer is not the only disease in which you get a discharge like this, so that even this symptom is not pathognomonic. For instance, you may get a considerable watery discharge associated with pregnancy, as in the condition known as hydrorrhœa gravidarum. You may also in cases of malignant disease of the Fallopian tubes, and in the condition known as hydrosalpinx profluens, get a watery discharge per vaginam. These conditions, however, are much more rare than cancer of the uterus. Excluding pregnancy, the commonest cause of a considerable watery discharge, no matter what the age of the patient may be, is cancer in the cervix or in the body of the uterus. I remember the case of a young woman of twenty-six, whom I saw three or four years ago. Her only complaint was that she had a thin, watery discharge, which stained her linen yellow. She had no other symptom at all. She looked in good health, had no pain and no hæmorrhage, and yet when I came to examine her I found a large cauliflower excrescence on the cervix and the case had gone too far for operation. In cancer the discharge is not always like this, it may be like ordinary leucorrhœa, so that there is nothing about it to arouse your suspicions. But if you get irregular hæmorrhage and a watery discharge co-existing, you must always feel suspicious that the case may be one of cancer.

The third symptom which one ought to mention, although it is the least important of the three, is pain. It is curious that a very large proportion of the cases of cancer have no pain, at any rate during the earlier months. When present it is usually felt in the lower lumbar and sacral regions. As has been said before, women may be divided into two classes—those with backache and those without backache, and the first class are perhaps more numerous than the second. Very often it happens that those patients who make the most complaint of pain have the least to show for

it. Therefore the presence of pain in itself helps one very little; on the other hand there may be complete absence of pain, and yet disease may be present and considerably advanced. The statement is often made that the pain of cancer is unrelieved by lying down, whereas inflammatory pain is so relieved. I have never been able to verify that statement, though I have often inquired about it. Frequently women with inflammatory pain are not relieved by lying down, and women with pain, in whom no lesion can be found, are often worse when they lie down. I do not think there is anything about the severity or the location or the character of the pain which helps in your diagnosis. I repeat, that all you can say from these symptoms is that it is your duty to make a thorough local examination, and not consent to treat such cases unless the patient will allow you to make an examination, for cancer has to be diagnosed in every case by physical signs.

The physical signs of the disease are, fortunately, less equivocal than the symptoms. It will be obvious that cancer affecting the vaginal portion of the cervix is much more easily recognisable than cancer affecting the other parts. You see that the vaginal part of the cervix is accessible to the finger, and also to the sight by the use of the speculum, whereas the supra-vaginal cervix is out of reach; you cannot touch nor see it, neither can you touch or see the growth when it is in the body of the uterus, unless you previously perform the operation of dilating the cervix. But to the ordinary clinical examination, cancer of the vaginal part is much more readily accessible than cancer of the supra-vaginal part or body of the uterus. Cancer affecting the vaginal part of the cervix may be seen in two forms. It occurs most frequently, perhaps, in the form of a nodular outgrowth. This has the following characters. As a rule it is limited to one or other lip of the external os. To the finger it feels hard and irregular, and is raised above the general surface. It is friable; if you scrape it gently with your finger-nail it breaks away. It bleeds easily, mere scraping with the nail, or even with the pulp of the finger, being sufficient to cause hæmorrhage. It is, therefore, a raised, hard, nodular, friable growth, which bleeds easily on being disturbed. If you look at it with the speculum you find that the nodules are greyish or blackish and opaque. There is one simple

condition which gives rise to nodules which might possibly be mistaken for cancer in the cervix, viz. the occurrence of nabothian follicles; these are retention cysts in the substance of the cervix, developed from the deep parts of the cervical glands. But they are smooth instead of being rough, translucent instead of being opaque, do not break away or bleed on being touched, and if you puncture them glairy mucus escapes.

There is another physical sign which ought to be mentioned, although I have never made much out of it. In cancer of the breast the skin is often involved over the growth, so that you cannot slide the one over the other in the way that you can slide skin over healthy structures. In the vaginal part of the cervix you can in the same way slide the mucous membrane in health over the deeper structures, but when the cervix is invaded by cancer, Spiegelberg pointed out that the mucous membrane of the cervix becomes adherent over the growth, so that you cannot move it as you can in a healthy cervix. This is a physical sign which it is very difficult to obtain, and I do not think it is of much value.

The second form in which cancer may occur in the vaginal part of the cervix is the ulcerating form. Occasionally, instead of the hard nodular outgrowth, there occurs a hard-edged, rough, ragged ulcer, which bleeds very much more easily than the nodular form. With the help of the speculum this ulcer is seen to be dark or bright red in colour, and very ragged and irregular on its surface, and the edge is definitely raised. There are one or two conditions which might possibly be mistaken for this. In the first place there is the condition known clinically as granular erosion. This is an overgrowth of the columnar-celled mucous membrane upon the vaginal portion of the cervix, so that instead of having stratified epithelium covering it, we have the columnar-celled mucous membrane overgrowing the os. That gives rise to certain appearances which are a little like malignant ulcer, but there are these important distinctions:—In the first place, an erosion is generally symmetrical and affects both lips of the os equally. It feels soft, it is not definitely raised above the surface, it never bleeds very severely, and, if local treatment is applied to it, it generally heals up quickly. A cancerous ulcer is usually asymmetrical, affecting only one lip of the os at

first; it feels hard, is elevated above the surface, it bleeds freely, and if you apply a caustic it becomes worse. There are, however, two other forms of true ulceration which may also occasionally lead to error, namely, tubercular ulcers and hard chancres. Tubercular ulcers on the cervix are very rare, and so are chancres. Chancres ought to be easily recognisable by the constitutional signs of syphilis. Tubercular ulcer is difficult to recognise, and often the distinction has to be made by means of the microscope.

Whenever there is any doubt about the local appearances, an appeal should be at once made to the microscope, because in circumstances like these the microscope very seldom errs; you can always tell by the microscopical section of a growth whether it is malignant or not, though you cannot always tell what variety of malignant disease you have to deal with. If a portion of the growth has to be taken for microscopical examination, it must be taken in a definite and satisfactory way. The part of the growth which should always be taken is the edge, a little bit should be snipped away with knife or scissors, including the healthy tissue outside the growth. If you send that to a microscopist who knows his business you may be certain that his verdict is reliable. But if you break off a bit of dead tissue from the middle of the ulcer, it is impossible to make anything out of it, because the tissue is dead and has lost its characters. But if you take a bit from the growing margin there is never any difficulty in making a satisfactory diagnosis. Therefore the microscope is your last appeal in all cases of doubt which cannot be settled by other means.

I would like to emphasize still more the importance of speculum examination in these cases. The sense of touch requires more education than the sense of sight, and until you have examined a large number of cases you do not feel at all familiar with the consistence of the healthy surfaces. You can easily learn what the cervix looks like, but not so easily what it feels like. With the speculum you can readily discern a departure from the normal, and thorough exposure of the parts in a good natural light will often clear up the case.

There is this to be said, that in old women these conditions which I have mentioned as pos-

sible difficulties in diagnosis—tubercular and syphilitic trouble—are rare, so that the differential diagnosis from those conditions is really only of importance concerning young women. If you have these symptoms and an obviously morbid condition of the cervix in elderly women, you are certain it must be malignant disease; but in the case of younger women it is always necessary to remember that some one or other of these conditions which I have mentioned may be present instead of the malignant disease.

With regard to cancer of the cervical canal, of course, as I have already said, this is a condition which cannot be recognised in the early stages either by sight or by touch. As a rule it goes on for a considerable time before it gives rise to any appreciable physical change; and then you are simply able to make out a considerable enlargement of the part of the cervix which lies above the vaginal roof. When pressing your fingers into the fornices on either side of the vaginal portion, instead of finding a cylindrical cervix, as in health, you feel an irregular, hard expansion. That, as a rule, is all that you can make out in the early stages, that it is hard and enlarged indefinitely. Occasionally the growth spreads downwards into the vaginal portion of the cervix, and may come to the surface at one or other spot, or may appear at the external os, and in this way may give rise to a hard nodular growth affecting the vaginal portion of the cervix just as if the growth originated in that part. But, as a rule, it does not do so; it remains above the level of the vaginal roof, tending rather to invade the body of the uterus than the vaginal portion, and it is very difficult to diagnose it. This condition will be easily recognised if you dilate the cervix and pass your finger into the canal.

If the disease is in the body, although the symptoms are very much the same as in cancer of the cervix,—irregular hæmorrhage, watery discharge, perhaps pain—you have no actual appearances which you can go by until you have dilated the cervix and passed your finger into the uterus. In a suspicious case in which you have irregular hæmorrhage and watery discharge and pain, and the local appearances as regards the cervix are healthy, the next thing which it is necessary to do is to dilate the cervix and pass the finger into the uterine cavity. You can then explore the

walls of the uterus and of the cervix, and you can see whether at any part there is hard nodular growth which gives the impression of malignant disease. If there is no such growth to be felt with the finger, you use the curette freely and scrape away all the endometrium from the body of the uterus that you can, and submit some of the fragments from the endometrium to microscopical examination. In this way you may succeed in detecting the early stage of cancer by the microscope. Although there is not enough disease to give rise to palpable nodules, there is enough to be easily recognisable by the microscope, and you may find evidences of disease at an earlier stage than if you waited for the actual changes which can be recognised by the finger. On these lines the diagnosis has to be made. In the later stages a new series of signs are developed, namely, fœtor of the discharge, fixation of the uterus, wasting and cachexia. None of these signs occur in the early stages of this disease, and my point is that we ought not to have to wait for these late manifestations before making a diagnosis.

There is another point you have to consider after diagnosis, viz. is the case operable or not? Cases are said to be operable when hysterectomy, either by the vaginal route or otherwise, is practicable. When the whole uterus cannot be removed the case is said to be inoperable. It was formerly the practice to amputate the cervix for cancer of that part, but that operation is now almost entirely given up. Improvements in the technique of the operation of hysterectomy have made the mortality no heavier than that of amputation of the cervix, and the permanent results are very much better. Therefore the operation is to be preferred on all grounds. It is not possible in all cases to do it. It depends on the stage to which the disease has advanced. There are two conditions which. render cancer of the uterus inoperable. The first is extensive invasion of the vaginal wall. Sometimes the growth involves the whole vaginal fornix and spreads to the posterior or the anterior wall. Now, you have an important structure in relation to the cervix and lower part of the body of the uterus, namely, the bladder. When this part of the anterior vaginal wall is involved the probability is that the base of the bladder is involved too, and if so you cannot remove the uterus or the whole of the disease

without making a hole in the bladder. If you do that the patient has a urinary fistula for the rest of her life, and her condition is worse than it was at first. Therefore, if you have any reason to suppose that the base of the bladder is involved, the case is inoperable. You can excise a portion of the posterior vaginal wall, because there is a considerable interval between the posterior vaginal wall and the rectum, without doing any harm. But the case is different with the anterior vaginal wall. You can do very little without going close to the bladder, so if you find the disease creeping on to the anterior vaginal wall, probably it is better to let the case alone. The other circumstance which renders a case inoperable is invasion of the broad ligaments. Invasion of the broad ligaments is not always easy to recognise. When the invasion is at all marked there is considerable thickening of the ligaments, and this thickening may be so great as to be palpable by ordinary vaginal examination. It has been my invariable practice before performing the operation of vaginal hysterectomy to examine the condition of the broad ligaments carefully under the anæsthetic before beginning, because one can make out thickening very much more easily under an anæsthetic than otherwise. It is best to examine through the rectum; you can get up much further *per rectum* than *per vaginam*, and therefore you can feel thickening very much more easily. What you do feel is that the ligaments, instead of being soft and pliable and narrow, are hard and thickened, and the mobility of the uterus is limited by these hard thickened ligaments. We must remember, however, that invasion by cancer is not the only cause of thickening of the broad ligaments and fixation of the uterus; the ligaments may be thickened by inflammatory disease, either cellulitis, or peritonitis, involving the posterior surfaces of the ligaments; this fixes the uterus in the same way as invasion by cancerous disease, and it is often very difficult indeed to tell whether we have to deal with an old-standing case of inflammatory fixation of the uterus or with a recent invasion of the broad ligaments by malignant disease. I do not know any means of distinguishing between these two by clinical examination. A careful consideration of the history of the patient will probably tell us whether there has been any illness previously which might have resulted in an inflam-

matory condition of the pelvic organs. One enquires about the patient's confinements or mis-carriages, and the recoveries which she made from them, or any severe illnesses which she has had, apart from pregnancy, and if the result is nega-tive, inflammatory disease causing fixation of the uterus can be excluded. These difficulties only arise with partial fixation; if the uterus is quite devoid of mobility malignant invasion is certain.

I have here one or two specimens which I want to show you illustrating this condition. One is an early case of cancer of the uterus which I removed a fortnight ago from a lady aged thirty-six, who was sent to me by Dr. Overend of Totten-ham. The part of the cervix involved is the inner surface of the lips. It is a rough friable growth, and was eating its way for a considerable distance into the cervical tissue. In life it felt very rough, hard, and irregular to the finger. There was no invasion of the broad ligaments, but there was great difficulty in performing the opera-tion on account of adhesions. The tubes and ovaries were bound down, and the uterus was adherent in front and behind, making the opera-tion very difficult. But in the end I got it away, and the patient has done very well. She had had both hæmorrhage and a watery discharge for six months, but had not thought of consulting a doctor about it until quite recently.

The Opium Habit in the East.—The ex-tent to which the opium habit prevails amongst Europeans in the East is only properly appreciated by those specially brought into contact with the victims; they will be interested in the announce-ment made by Dr. Neil McLeod, of Shanghai, that it is possible to cure the habit by the ad-ministration of sodium bromide. He gives the drug "in two doses of two drachms, in solution, every two hours for the first two days, and one drachm on the third day," and adds that "three ounces of the drug in all will probably suffice in most cases." The treatment is quite safe and is well worth trying.—*Journal of Tropical Medicine*, July, 1899.

DISCUSSION ON
THE RELATION OF GOUT TO RHEUMATOID ARTHRITIS,
AT MEETING OF
THE NORTH-WEST LONDON CLINICAL SOCIETY.

(Continued from p. 222.)

Dr. SAVILL said on commencing practice he thought everything was perfectly clear as regarded these two diseases. But, unfortunately for his happy frame of mind, he went to a workhouse infirmary and became the workhouse doctor. There he saw that there were two very distinct diseases, acute gout and acute rheumatism, at any rate clinically, but that when they came to the subacute and the chronic conditions a totally different state of matters was met with. In any workhouse infirmary, with 500 beds, it would be found that there were at least twenty-five cases that could be compared one with the other, and they could not say, until they were on the post-mor-tem room table—and perhaps not then—whether the case was one of chronic gout, chronic rheu-matism, or rheumatoid arthritis. Therefore, from a clinical point of view, he must maintain that there were really at present no absolute means of distinguishing the chronic conditions which they knew as rheumatoid arthritis, chronic gout, and chronic rheumatism, with one single exception, namely, when there were actual chalkstones deposited in the joints. There were always a certain number of cases where the urate of soda could be seen through the skin, and sometimes it made its way out. How were they to sort out this clinical mixture of cases? He thought the best way was to ask themselves what was the cause of the joint mischief. In doing so he was accustomed to group his cases into those who had one or two joints involved and the rest comparatively free, and those who had practically all the joints in-volved. He did not know whether he was right, but the teachings of nature had corrected the teaching that he had when he was a student, and had told him that one could practically group a large number of cases of this mixture into three distinct diseases, namely, chronic gout, chronic

rheumatoid arthritis, or chronic rheumatism, and another disease, rheumatoid arthritis. With rheumatoid arthritis he thought one ought to group gonorrhœal rheumatism, because he did not know of any clinical means of distinguishing between gonorrhœal rheumatism and the disease he had learnt to know as rheumatoid arthritis, when it involved a large number of joints, as it sometimes did. It marched from joint to joint, but salicylate was as useless as was any other known drug. He considered cases to be chronic gout when once they tended more or less to be confined to, or at any rate predominate in, one joint, or to attack others only in a minor degree; he called cases rheumatoid arthritis when all the joints were attacked; chronic rheumatism he distinguished by the texture round the joints being chiefly thickened, not so much by the lipping and thickening of the bones as of the tissues round the joint, and the resulting stiffness. Clinically he believed there was a very fairly marked clinical distinction between those three affections. It would take too long to go into all the particulars. In reference to the treatment, the gouty cases used to do very well on iodide of potassium and alkaline treatment. The rheumatic cases, albeit chronic, always derived benefit from salicylate of soda. The rheumatoid arthritis cases never did any good on anything except treatment by lean meat and copious libations of warm water. One pound of lean meat—sometimes exchanged for fish—per diem, and as much warm water as they could get through, nearly always ud such patients a lot of good. The worst case of rheumatoid arthritis he had ever met with was in a woman who was the wife of one of his own guardians, only twenty-eight years of age, whose condition had reached that advanced stage that she could not even feed herself, and was carried in and out of the room like a log, and she could not turn herself to more than a quarter of the circle. After three months of the treatment he had mentioned she could move about in a perfectly normal way, and all the mischief disappeared from the joints in the most miraculous way. Cod-liver oil had much the same effect. Therefore, from the point of view of treatment, he thought the distinction in the diseases was very fairly marked.

Dr. SHAW said that from his own experience in general practice in the past he would confirm what Dr. Savill had stated as his experience in infirmary practice, namely, that there were distinct cases of acute gout, acute rheumatism, and acute rheumatoid arthritis. He would say that the bulk of cases met with in general practice were cases which it was impossible to label by one or other of those titles. What he really wanted to say, however, was a few words on the relation of those two diseases to gynæcology. There were people who thought that anyone who aspired to be a gynæcologist should not only confine himself to the treatment of women, but strictly to the treatment of females suffering from diseases peculiar to women. He totally disagreed with that view. The two subjects under consideration went a long way to support the view that the treatment of diseases peculiar to women should be based on the general principles of medicine. A woman very often came, either in the out-patient room of the hospital or in private practice—it did not matter which—complaining of backache, pain perhaps in one or other groin, generally the left, pain down the thighs, bearing-down pain, leucorrhœa, prolonged menstrual periods, yet examination showed that that woman, in addition to the leucorrhœal discharge, perhaps had some cervical discharge with an enlarged and tender uterus. The too-specialised gynæcologist, to be logical, would diagnose that the patient was suffering from some congestion of the endometrium, order her rest, hot douches, and probably the application of carbolic acid to the interior of the uterus. Or, if he were of an operative turn of mind, he would at once suggest curetting. His experience of a very large proportion of those cases was that instead of local treatment, what the patient required was the treatment which would be applicable to gout. Instead of rest the patient should be encouraged to take a moderate amount of exercises, plenty of fresh air, diet of a simple character, but nitrogenous, and the avoidance of alcohol. Very early in practice he learnt that some ladies suffered from metrorrhagia and so on simply from taking wine. But if they had been told they were suffering from alcoholic metrorrhagia they would have been shocked, and the physician would not have seen them again. But they were strongly advised that alcohol was very prejudicial to their condition. By following simple hygienic rules of that kind a great deal of

good was done. It was remarkable, too, how such people deceived others about the state of their bowels. It was a very curious coincidence that a patient, at an interval of two or three years, used the identical words in describing the state of the bowels, namely, " as soon as I put my foot to the floor in the morning my bowels are moved." Nothing could be more satisfactory than that on the face of it, but' nevertheless that patient was really constipated. He always made a point of examining the abdomen in such cases, and often found them fully loaded. He would say, as a result of his own experience, that sulphate of soda and sulphate of magnesia—Glauber's salts and Epsom salts—would themselves cure an immense amount of so-called diseases peculiar to women. He would like to say one thing with regard to rheumatism, namely, that many patients suffering from chronic rheumatism could be cured, if the source of the rheumatic poison was removed, by treating the catarrhal conditions of the uterus and its cervix. He learnt that twenty years ago from Dr. Ord at St. Thomas's. He was very glad to hear Dr. Luff say, at the previous meeting, that rheumatism was a toxæmia. He had long held that view, and that the toxin was absorbed from any mucous surface whatsoever—whether from the throat, as in tonsillitis, from the urethra as in gonorrhœal urethritis, or from the cervix. What he would like to know was whether those cases of rheumatism which were dependent on inflammation of the canal of the cervix were really due to the gonococcus. It would be a point of interest if one could find that out. There was one other point that he would like to accentuate with regard to the relation of rheumatism to gynæcology, namely, that a great many of the symptoms arising in these patients were due 'to the rheumatic condition of the pelvic ligaments, of that he felt perfectly sure, and the treatment of those cases was the treatment applicable to rheumatic fibrous affections anywhere else. He believed if they were recognised, a large number of women would be relieved who otherwise go on year after year leading semi-invalid lives.

Dr. W. WHITFIELD said it seemed to him that osteo-arthritis or rheumatoid arthritis ought to be distinguished from the other conditions, because he thought it had a different pathology. Late in the disease he thought the difficulty in distinguishing the two diseases might be so great as to make such distinction impossible. His own view was that rheumatism was one disease and gout another, osteo-arthritis was a third possibility. In the early conditions of the joints he thought rheumatism and gout were perfectly separable. Later on the disease itself might have passed off, there might be none of the active disease process left, and they had to do simply with sclerosis of the joint that had been the subject of chronic inflammation. In the later stages it was only by the distribution of the affection or by the peculiar deformities present, or by the history, that a diagnosis could be made at all. As a matter of fact, in the later stages they had to deal with the battlefield, not with the battle. He had himself a very clear idea of a clinical picture of a certain disease which seemed to him quite separable from all others, the points of which were that it was an entirely symmetrical disease; secondly, it attacked children sometimes, women from puberty to thirty-two commonly, and then again was very rarely met with until the menopause. · It attacked men very rarely. The disease, as he knew it, generally occurred in the smaller joints of the fingers, and to a less extent in the toes. In the early stages every interphalangeal joint was swollen and tense, not especially reddened, and contained fluid, but the pain was not great. Of course it was easy in that stage to distinguish the disease from either gout or acute rheumatism. As regarded the treatment in the early stage, he believed one could treat them, but that drugs were entirely useless, so also was diet. If, before the deformities supervened, those cases were sent to Bath they practically recovered entirely. At West London Hospital he had two patients, in both of whom the condition started about the same time—three years ago. One was taken into the hospital, but got worse while there. Accordingly a letter of admission to a mineral water hospital at Bath was obtained, and while there she recovered so completely after a six weeks' course that, although she had been under his care since, she had had no relapse, and her joints had remained perfectly normal. But with the approach of the present winter she began to relapse again, but he believed that if she could be again sent to Bath she would again recover.

There were one or two somewhat peculiar sym-

ptoms associated with the disease. One of these was an intense perspiration of the palms and soles, and that could sometimes be noticed before the disease started. In such cases one could only suspect that osteo-arthritis was coming on. He had cases under him who had simply spoiled all the work on which they were engaged, owing to the sweat literally pouring off the palms of the hands. Another symptom which they occasionally suffered from was a peculiarly obstinate form of psoriasis. Psoriasis was a disease which he believed attacked perfectly healthy people, but it was too frequently associated with osteo-arthritis to be simply a coincidence. These three points which he had mentioned,—the bilateral symmetry, the sweating, and the association of some form of psoriasis,— caused him to look upon the disease rather as a nervous disorder than as either a toxæmia or a bacillary disease. He had not tried the actual guaiacol treatment of Bannatyne, but he had tried the creasote treatment in several cases, and beyond the peculiar aroma surrounding the patient, he could detect no difference from its use. He considered that these cases should be entirely separated from what were generally known as cases of osteo-arthritis in elderly people, occurring, possibly more often in men, from exposure, in which there was lipping of the bones and the formation of osteophytes, but in which the disease generally attacked the larger joints. Everyone had seen numbers of cases of that kind in men from fifty to sixty years of age.

Dr. SIBLEY said the question they were asked to discuss was the relation of gout to rheumatoid arthritis. It was clear that before they could get any way on the discussion they must define what they meant by the terms. He confessed that before attending the last meeting he had clearer ideas as to the meanings of the respective terms than he had that evening, but he hoped that indefiniteness of mind would not make any of his remarks ambiguous. Rheumatoid arthritis, as they found it at the present day among people in general, was the name given to the latter results or the deforming results of a large variety of more or less absolutely distinct and different diseases. The commonest form met with was of the rheumatic type, that which followed acute or chronic rheumatism, a type with certain special characteristics. The chief characteristics he would men-

tion in connection with it was the amount of adhesion and ankylosis occurring in connection with the joints. There was also a wasting of the muscles in connection with the joints, due, he thought, entirely to the disuse of the joint and not due to disease. If the power of the joint was recovered through any process of treatment or otherwise, the muscles would in most cases also regain to some extent their power of acting on the joint. An enormous variety of cases were met with in old and young men and women, in almost every country and under every condition ; in fact it was an extremely common disease, subject to a great variety of subdivisions, but the disease was primarily due to uric acid. He might mention that almost any form of rheumatism that had gone on for a certain length of time was called rheumatoid, and when the deformity became sufficiently pronounced it was called rheumatoid arthritis. But the line was an arbitrary one. Secondly, there was a form of deformity of joint following cases of gout, and those were the cases they were asked to discuss. That form of rheumatoid arthritis he would say was a frequent result of gout in some form or another. Then there were what he might describe as borderland cases, that is to say, cases intermediate between these two. He was sure that in the later stages they could not draw an absolute sharp line between the processes in acute rheumatism and rheumatic gout. Of course they all had in mind a typical case of acute rheumatism and acute gout, but when such cases had gone on for a long time it could not be said which they were. Another cause of what they called rheumatoid arthritis was injury to joints, probably in early childhood ; in other words, there was a deformity resulting from chronic inflammatory condition of the joints, probably of a rheumatic nature. A distinct type is associated with pyæmia, other debilitating diseases such as syphilis, either acquired or congenital, various malarial diseases and tropical fevers. People who had had those diseases were very prone to degenerative changes in the joints later on in life, which changes, if at all pronounced, would be called rheumatoid arthritis by many people. Possibly a variety of one of those was that following tubercular disease in early life, such as cases of hip-joint disease in children. The hip-joint probably recovered itself with only a slight limp remaining, which went on

for many years, and then later on in life, say, between fifty and sixty, there was a certain stiffness in that joint, and increased difficulty in walking and moving, and then ultimately the condition might spread to the opposite joint and the patient become completely crippled. Another variety, which was often described as typically rheumatoid arthritis, was that of hip-joint disease in old people, differing from many forms of rheumatoid arthritis in that it was frequently purely a joint affection. They knew of cases in which hip-joint disease came on late in life, in which the disease completely crippled the patient, but never extended to any other joint. He looked upon that as a distinct type of disease from the previous ones. Then there was the class of disease which the last speaker had laid some stress upon, and which he himself would be disposed to call rheumatoid arthritis, that was distinctly a neural disease, one due to a trophic neurosis, not a disease due to a gross lesion of the spinal cord. At the last meeting, Dr. Luff, in criticising the neural theory said he never found any obvious degeneration of the columns in the cord, and therefore it clearly was not a disease of the neural system. But he (Dr. Sibley) maintained that it might be a disease of the trophic nerves, and if so they would not expect to find any obvious degenerative changes in the spinal cord. He did not think that was a sufficient reason for not regarding it as a neural disease. There were undoubtedly large numbers of mixed cases of rheumatic gout, borderland cases, cases starting as scrofulous disease in early life, possibly followed by degenerative rheumatic changes in later life, and so on. Dr. Luff remarked that in rheumatoid arthritis uric acid was not found deposited in the joints, whereas in gout it was found. He (Dr. Sibley) agreed with the remarks made by Dr. Haig last time, that whether or not uric acid deposit was found in the joints, was purely accidental, and depended on the time at which the joint was opened; at one time it might be riddled with uric acid, and if the patient died of an acute illness at such a time, uric acid would be found in the joints. If, however, the patient died after many years of chronic suffering, uric acid was not found, because it had become absorbed. Therefore the fact that uric acid was or was not found was of no diagnostic value whatever.

As to rheumatoid arthritis, he would define it as a neural disease. First of all it was a symmetrical disease. The most typical joint affected was the terminal one of the middle finger, first in one hand and then in another. Usually the disease came on late in adult life, occasionally occurring in children; he had seen one or two typical cases in children of eight or ten years of age, affecting first one joint and then another, until all the joints in the body were involved. It was a disease which occurred more commonly in women, and in women of a certain type. It occurred occasionally in men, but these men were generally of a neurotic character, having typical neurosis. One of the most typical cases of the disease which he had seen occurred in a lady who had been an invalid all her life, and for many years had been unable to walk. But one day suddenly she was able to walk across the room, and she continued able to walk for a year or two. After that she became crippled again, and presented all the typical symptoms of rheumatoid arthritis. There was a peculiar condition of the muscles of the joints in typical rheumatoid arthritis which occurred in connection with rheumatism, in which the muscles were wasted from disease but not degenerated. In the particular disease in which the muscles were degenerated he was reminded more of the muscles and tissues of myxœdema. It had always struck him that the disease which in this country was looked upon as rheumatoid arthritis was closely associated with Charcot's disease, where there was an obvious gross lesion of the spinal cord. In the condition to which he was particularly referring there were distinct visceral degenerations, which accompanied or perhaps preceded the more gross arthritic changes. People who were the subjects of the disease suffered in the first instance from dyspeptic troubles, degenerative changes in the mucous membrane of the stomach and intestinal canal, such people taking their nourishment very badly and being erratic in their appetites, taking all sorts of messes and failing to properly digest what they did take. Also, even in the typical cases, they frequently passed albumen. And associated with that, even in young people who had no rheumatism at all, he had seen evidence of cardiac lesions such as valvular disease with murmurs, and in one woman of thirty it was questionable whether there

were not some pericardial changes. There was distinct visceral degeneration, even the brain was sluggish, as evidenced by her mental torpor. The disease was also associated with vaso-motor changes, there was typical glossiness of the skin, and a cold feeling about the joints. Sometimes .the subjects of this disease were cold from the hips to the toes, though they themselves frequently complained of burning, that is to say, they frequently suffered from perverted sensations. A noticeable point in such cases was the presence of cold points or patches, generally over one hip, even after the limb had been artificially warmed, a fact on which much stress had not been laid. Sometimes the patients themselves were aware of this cold patch, over which there was frequently some perverted sensations. Rheumatoid arthritis was a painful disease, not necessarily at all times, not necessarily more painful at night, but still extremely painful at the slightest movement of the joint. These patients generally suffered from what they called jumping of the joints, coming on at night and even waking them up out of sleep. Another feature was, as Dr. Whitfield had remarked, the profuse perspiration, chiefly in the palms of the hands in the early stage, but later affecting the whole body. He would therefore describe rheumatoid arthritis as a disease of tropho-neurotic pathology.

He was very much interested in Dr. Savill's remarks on treatment. He had noticed patients who had had the Salisbury treatment—lean meat and hot water—but they had not improved under it, because physically they got weak; still it did relieve their pain. He would like to ask Dr. Haig what was his explanation of that, because it seemed to him to run counter to Dr. Haig's theory. The dry hot-air treatment was very efficacious in gout and rheumatoid arthritis, although many cases of typical gout were distinctly harmed by giving them the usual treatment for rheumatoid arthritis, and conversely. He was particularly pleased with that because he was one of the first to work at the subject, first with the Tallerman apparatus, and more recently with the hot air produced by electrical radiant heat. In the latter, in addition to the hot air, the luminous rays were drawn in. It was extremely interesting in some of the cases to try the effect of cutting off certain rays of the spectrum. Some of them would re-

member a paper published by Dr. Bowles on the influence of sunlight in sunburn, &c., and that authority pointed out that it was the extra violet rays which produced sunburn; therefore, if those were cut off, a marked therapeutic effect was produced by the heat rays apart from the sunburn-producing rays. The claims made for the process by electrical radiant heat were that radiant heat was more penetrating to the tissues. It had been shown that as the light rays were brought into use the heat rays became more intense, and so, in addition to the general diffused heat, one got the luminous radiant heat which penetrated more deeply into the tissues than simple heat from a hot-air temperature.

Mr. JACKSON CLARKE said it was at his suggestion that the subject under consideration was selected for discussion, and the suggestion was intended, selfishly, to bring him peace of mind, because he only saw these patients in snatches, when he had the honour of helping a physician, and he wanted his little bits of experience to be pieced together into an entire impression of the pathological career of individuals. He had almost felt during this discussion that that had not been perfectly done with regard to the diseases under consideration. He meant the following of an individual in his record from infancy to old age, and giving the phases of his disease as far as it referred to the present subject at each period of his life. One could have wished almost that a private individual were like a soldier, who could show a statement of his medical history as he passed along from regiment to regiment and from country to country. Or they might go beyond that in private practice and make post-mortem examinations fashionable, and then hand down to posterity the facts which have been ascertained. He would first mention very briefly his pathological impressions. He noticed one remark of Dr. Whitfield's that evening as a settled conviction of his, namely, that the pathology of rheumatoid arthritis was quite different from that of gout. He (Mr. Clarke) had made something like 2500 post-mortem examinations, and the result of his experience was that he could not fully corroborate that statement of Dr. Whitfield's, as far as the morbid anatomy went, both in the gross anatomy and in the minute anatomy, with the exception of absence of biurate of soda crystals. He would

say that they could not distinguish a chronic rheumatoid joint from a chronic gouty one, except by that presence or absence of biurate of soda crystals, neither histologically nor with the naked eye. But that was only a little piece of evidence, for pathology was more than morbid anatomy, and the whole of clinical experience was only a part of pathology. What he sought for was a pathological settlement, which perhaps Dr. Whitfield would be able to give some time in the future.

Regarding the surgeon's experience of these diseases, there was no disease which gave more employment to the surgeon than rheumatoid arthritis, and it began in very early years. He exhibited a photograph of a child who was in Great Ormond Street for some time, and at the age of two years came to his out-patient department on account of deformity of the spine. At that time the swelling at the ribs and finger joints and the swelling of the spleen and glands was more marked than in the photograph. All the parts affected were extremely painful, the spine especially so, and the general condition was one of extreme anæmia, emaciation, and weakness. That child was now rosy and generally well, but a great amount of stiffness remained in the joints, to which treatment would in due course be applied, probably section of tendons at the knee-joint and so on. These cases occurring in infants had been thought by Mr. Steel and others to be quite different from other cases of rheumatoid arthritis, chiefly on account of the swelling of the glands and spleen. He (Mr. Clarke) could not quite endorse that opinion, and in that he agreed with Dr. Bannatyne of Bath. He believed it was the same disease as they saw in older children and in adults. There was another large class of cases in which there were little troublesome conditions such as hammer-toe, small deformities of the fingers, &c., and these happened at all ages. He knew of a lady aged seventy in whom hammer-toe was developing in the first stage, but it was softer than normal. In her the disease was just as it was in young children. Among his patients were many schoolboys who were destined for the services, and in whom defects such as those he had mentioned would be serious. Many of those cases had gouty parents, so that Mr. Jonathan Hutchinson's view that rheumatoid arthritis was inherited

gout had come up from time to time, and he hoped to get an answer on the point in this discussion. His own experience, so far as it went, was quite in harmony with Mr. Hutchinson's. Another group of cases occurred in young adults, chiefly girls, in whom the symptoms were spinal, sometimes there was hyperæsthesia of the skin in the region of the spine, sometimes deeper seated pain, often combined with initial deformity. Many of those cases of spinal deformity first noticed in adult years had evidence of deformity dating from early childhood and apparently of a rachitic nature. But they formed a large class of cases which were benefited, except those with extremely sensitive skins, by adequate support, which enabled them to get out of doors. These cases were generally anæmic, and, whether children or adults, they tended to have enlargements of the costal cartilages, either at their junction with the ribs or sternum. The next group of cases belonged both to gout and to rheumatoid arthritis—Dupuytren's contraction cases. Some of those cases were typically rheumatoid, and others were typically gouty, with ruddy faces, with histories of attacks of gout and of irritable disposition. Some had intermittent albuminuria, and others had never had attacks of gout. These latter were pale, rather anæmic, but resembled the others in being nervous and being inclined to be tremulous. In a report of a discussion by Mr. Lockwood which had been published, and one by himself which had not been published, urate of soda crystals had been found in the contracted muscle in Dupuytren's contraction. So that in some of them there was gout, while in others they could only say there was rheumatoid arthritis. Dr. Sibley had brought out in the discussion the dominant tone of the nerves in rheumatoid arthritis. That he fully concurred in, and he would only make one observation on that head, namely, that he believed Dr. Luff stated last time that he had never seen a case in which there was a complete paralysis with loss of electrical reaction in cases of rheumatoid arthritis. There was a case in that hospital, the North-West London, under Dr. Sutherland, in a woman aged fifty-four, who three years previously had suddenly become the subject of a paralytic calcaneo valgus form of club-foot, and the calf muscles of the peronei had lost not only every motile faculty, but had

completely lost any reaction to electricity. He remembered that Dr. Sutherland viewed the case as one of peripheral neuritis. The question arose in his mind, was there any relation, any ultimate pathology between those two diseases, rheumatoid arthritis and gout? Two other elements entered into his state of mind, and led him to propound for discussion this question. One was, after reading in Sir Dyce Duckworth's writings that the Irish were very subject to osteo arthritis when at home, and to gout in London; he wondered whether it was the difference between the potatoes and beer. That led him to think that there was a common kind of basis in some cases between rheumatoid arthritis and gout. He (Mr. Clarke) showed a photograph of a woman's hand with a small curvature of the little finger. It was a poor little deformity, but it had interested him a great deal. Why did it come? The type of person who had it had been described as an over-perspiring, badly-digestioned, flushed-faced individual, who would be called, perhaps, by his friend, Dr. Sibley, a case of rheumatoid arthritis. In other cases, after a slight injury, a thickening formed in the bones of two or three joints. So frequently had he observed those sequences that he sometimes said " if that person has a slight accident he will get one of these deformities." That underlying *something* wanted a name. Dr. Haig had worked at the subject and suggested a solution, and he would like argument to go on until there was a clear concensus of opinion as to what that underlying something was. Gout in one shape was common in children, that is in a tendency to a formation of uratic deposits, and he remembered well the teaching of Sir Henry Thompson, which he followed out, namely, give those cases plenty of proteids and very little starch and sugar. In children that answered as well as in adults in amending their digestion and their arithritic phenomena.

Dr. HAIG said he was very pleased to say a few words in reply to Dr. Sibley. He would also like to supplement one thing which he said at the previous meeting. Sir Alfred Garrod thought rheumatoid arthritis was associated with debility, and if the debility could be removed the joint-disease passed off. His (Dr. Haig's) experience was simply that in those cases where the Salisbury treatment was

given it did good to the pain and also removed the debility, and in that respect he differed from Dr. Sibley. A very few cases which had done well on the Salisbury treatment had come to him, but a considerable number of those who had not done well under that treatment came to him, and that was because they were so upset by the meat, and, in consequence, had become badly nourished, and their joints got worse again. He had described such cases in his book. One patient, put on Salisbury treatment, went on well for some weeks. At the end of six weeks something upset the digestion and the patient became very depressed and low, and went from bad to worse until she had epileptic fits, and was comatose at the end of thirty-six hours. So long as the meat stimulated her, her joints were better, then something upset her and the meat no longer acted as a stimulant. A point he also mentioned last time, having referred to this disease as one associated with debility, was that the effect of that debility was to bring a lot of uric acid into the blood, and that was the constant effect of debility. He could produce arthritis in any one who did what he told him. He had done it on himself, and he had seen it produced in other people. But he could not produce arthritis in any one unless he first brought a lot of uric acid into the blood, the fact of which he knew by excess of uric acid in the urine. After this condition of uric acid was present he had power to produce arthritis in any one, but not otherwise. His whole point was that the condition was associated with debility, that the debility produced an excess of uric acid in the blood and urine, and that when the excess was present the joints were irritated; but if by any means, such as meat diet or tonics, they stopped that debility, the blood would be cleared of uric acid, the irritation of the joints would stop, and the disease would come to a standstill.

Dr. EWART, in replying to the various speakers, first expressed his gratification in raising a discussion of great interest and value; he was only sorry the chairman had not joined in the discussion. Reviewing the discussion in general, he would say it brought out very clearly the fact which did not appear in books, that rheumatoid arthritis was a name, and a name only, which had been applied to a great variety of conditions. As he foresaw, the difficulty in discussing this

subject was that they would not all be talking about the same thing, and some of the remarks which had been made were in that sense one-sided. He felt sure that those who made the remarks would not for a moment regard the particular points as applying to the entire group of those affections which in the books were classified as rheumatoid arthritis. Admitting the variety of conditions, he was not astonished that they should still in that room have some divergence of opinion as to the pathology of rheumatoid arthritis. Dr. Luff gave an admirable account of rheumatoid arthritis as laid down in the books, and supplemented it by some points which he (Dr. Ewart) had omitted. Dr. Luff declared himself a strong supporter of the infective theory, and gave arguments, some of which were very much to the point. It stood to reason that any nerve mechanism would react to poisons, and to poisonous blood or to imperfection of circulation or imperfect supply of blood, and therefore it was very easy to pass from one theory to the other. Nevertheless, in some of the cases he believed the nervous function came thoroughly to the fore. As Mr. Jackson Clarke had remarked, in some cases there was an actual infection of the nerves coincident with the affection in the joints. Therefore, he (Dr. Ewart) was not entirely converted by Dr. Luff's remarks on the infective nature of the disease. A distinction had already been drawn between a certain set of cases purely infective and the remainder in which the infective causes had not been demonstrated. He believed that in most cases the organism as a whole suffered, but eventually the nervous system pre-eminently, together with the joints, and it was open to them in the future to find out whether in all cases, or only in a limited group now recognised as infective, there was an infective element starting the nervous disturbance. He regarded that in the discussion they had not adhered always strictly to the special point which was raised, namely, the relation between rheumatoid arthritis and gout. Nevertheless, he believed most of the speakers had referred to it, and Dr. Luff in particular. The latter speaker established a very strict distinction between rheumatoid arthritis of the pure type and gout of the pure type. He and Dr. Luff had also admitted that in the chronic stage the differentiation of the two conditions was

extremely difficult, due, as Dr. Luff stated, to the fact of gout being present. There was another combination which he believed more common, but which Dr. Luff seemed inclined to exclude, in which the rheumatoid arthritic changes were of old standing, and the gout supervened at a later period in life. He thought that was evidenced by post-mortem examinations where very marked rheumatoid changes were found after a long history of joint disablement, where the uratic deposit was plainly to be seen in the joint. Therefore he took the view that there were those two sets of cases—gout supervening upon rheumatoid arthritis, and rheumatoid changes supervening upon early attacks of gout. They had also the pleasure of listening to some remarks by Dr. Haig, which were always interesting. The difficulty which he, Dr. Ewart, felt in answering Dr. Haig was that he believed there was a strict distinction between gout and rheumatoid arthritis, and he could not bring himself to regard them as practically one and the same thing. Another difficulty was that rheumatoid arthritis was such a wide term and covered such very different affections, that even if Dr. Haig were to prove himself right in one of the conclusions, there would still remain a variety of affections also called rheumatoid in which he would also have to prove it. Therefore, it seemed to him a little hopeless to endeavour to argue that point. Taking a broad view of the matter, although they might not all agree with Dr. Haig that uric acid *per se* was the substance which did the mischief in rheumatoid arthritis and in rheumatism, still they might take it that a disturbance which led to that uric acid being in the wrong place and being too abundant, might lead also to collateral changes in the blood which might bring about arthritic irritation, and those collateral defects of the blood might include a variety which possibly would explain the variety in the types of the disease which they were accustomed to term rheumatoid arthritis. In other words, to admit that uric acid was answerable for all those conditions was a very responsible undertaking, and personally he could not subscribe to it. Still, when one looked at the arguments which Dr. Haig had worked out so admirably, one was inclined to agree with him that there was a *some-thing* underlying the process in its diversity, and that that something might arise from the impreg-

nation of the mechanisms of the body—chiefly the kidney—and that it must result in an altered condition of the blood favouring arthritic irritation. Dr. Haig's remarks concerning treatment did not quite answer the point which had been raised as to the opposite results obtained in the two sets of cases—gout and rheumatoid arthritis—from treatment and from diet. Concerning salicylates, they knew that Dr. Haig attributed the non-success of salicylates in all cases to conditions of temperature. As to diet, no doubt the subjects of the poly-arthritic depressed type always did better on a certain amount of stimulant than others, a practical point which it was difficult to overlook. He regretted Dr. Haig did not allude specifically to the question of alcohol. Concerning the Salisbury treatment, the case in which he tried it was that of a man aged fifty to fifty-six, with results which were not at all satisfactory; there was no perceptible change. The case was not acute at the time; the difficulty was that there was a partial fixation and helplessness of the wrist and considerable thickening. The diet, continued for three weeks, produced no benefit. He wished he could agree with Dr. Savill's remark as to the use of salicylates in rheumatism; as Dr. Haig had pointed out, they did not always succeed in that matter. Dr. Shaw's remarks were very practical, and coincided with the views he himself held as to the toxæmic share in the production of those changes. He was much interested to hear that some of the pelvic and intra-pelvic symptoms were possibly to be referred to a form of fibrous rheumatism. It was a novel view to him, but it certainly deserved consideration. Dr. Whitfield had dwelt on the wet palm and soft velvety skin which enabled one to diagnose the affection almost as one shook hands with the patient. Only the other day he saw a boy who had had a joint affection in earlier childhood, one bout after diphtheria at the age of three, another at the age of eight after scarlet fever, and subsequently he had had a swollen knee for a long period. The child was sent to him at eleven years of age by Dr. Rufenacht Walters, and there was then no swelling of the knee. This was analogous to the case described by Mr. Jackson Clarke, in which complete recovery took place. He would dwell on that for a moment, because it brought out another point to which Mr. Clarke referred: what was there

underlying the disease which appeared in some people whilst it did not appear in others apparently placed under the same circumstances and exposed to the same poisons? There must be in some individuals a tendency and liability to joint trouble, or to functional disturbance of the joints, an irritability or predisposition of the joints which did not exist in all. And just as there were some people inclined to mental disease, and others inclined to disease of the liver, so there were others in whom there was a great tendency to disease of the joints. That perhaps would answer the question why rheumatoid arthritis appeared in gouty people, namely, that they possessed a certain irritability of their joints, and would be more liable to suffer from toxic or neural conditions than others. He could not dwell on Mr. Clarke's remarks at great length, but everyone would be indebted to him for having raised the point. The remark about the Irishman in Ireland and in London was a very shrewd one; it put the case very well indeed, and covered a good deal of the ground. It showed that if a person had an irritable joint it would all depend on the form of irritation what form the disease would take ultimately. In the Irishman apparently in the one case it was rheumatoid arthritis and in the other gout.

Intra-Uterine Vaporisation. — Intra-uterine
vaporisation may be used as follows:

1. As an hæmostatic it has been employed most successfully in cases of non-malignant post-climacteric uterine hæmorrhages. It has proved curative in the various irregular bleedings met with in connection with catarrhal fungoid or hæmorrhagic endometritis. It acts as a palliative measure in certain cases of fibroid tumour or inoperable carcinoma associated with hæmorrhages. 2. As a caustic it can be relied on to destroy the mucous lining of the uterus, even to the extent of obliterating the uterine canal. 3. As a bactericide it may be used in cases of gonorrhœal or septic puerperal endometritis. 4. To reduce the bulk of the subinvoluted uterus, Pincus has frequently resorted to intra-uterine vaporisation with success. 5. In chronic suppurating fistulous tracts, Fenomenow has reported successful results in cases of abdominal fistulas of several years' duration, which had resisted all other methods of treatment. Abram Brothers ('New York Med. Journ.,' May 13th, 1899).—*Monthly Cyclopædia.*

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NOTICE.

A CLINICAL LECTURE

ON

INSANITY IN RELATION TO THE CHILD-BEARING STATE AND THE PUERPERIUM.

Delivered at the Bethlem Royal Hospital, London,
June 20th, 1899,

By W. H. B. STODDART, M.D., M.R.C.P.

GENTLEMEN,—Dr. Savage has asked me to
lecture to-day on "Insanity in Relation to the
Child-bearing State and the Puerperium." One
considers insanity in relation to child-bearing
under three heads: firstly, it may occur before
the birth of the child, that is, during pregnancy;
secondly, it may occur at delivery or within a short
time afterwards; and thirdly, it may occur during
the period of lactation.

Puerperal insanity proper—the insanity due to
the birth of the child—is, of course, sharply marked
off in time from the insanity of pregnancy by
the birth of the child. On the other hand, in-
sanity of parturition is much less definitely marked
off in time from the insanity of lactation. The
scientific basis for such partition is, of course, the
time at which the involution of the uterus is com-
plete. Now authorities differ very much as to
the duration of the process of involution. It is
said that if the surroundings be perfectly hygienic,
the involution should be complete at one month
from the delivery. On the Continent six weeks is
the recognised time. Other authorities, however,
extend the period to as much as three or four
months after delivery. For practical purposes,
we, as alienists, put the limit at six weeks. That
is to say, if the insanity comes on within six weeks
of delivery it is called the insanity of parturition,
or puerperal insanity proper; but from the very
day that those six weeks expire we have to call it
the insanity of lactation, thus fixing the time very
arbitrarily.

Insanity of Pregnancy.—This is very rare, and

it is surprising that it is so rare, because pregnancy makes a very great difference to the psychical condition of a woman. For purposes of prognosis we have to divide it into early insanity of pregnancy and late insanity of pregnancy. As regards the insanity proper, it is very difficult, if at all possible, to say, apart from the history, whether a given case of insanity is one of insanity of pregnancy, of parturition, or of lactation. What I mean is that even a person of large experience in insanity is probably unable to say whether a given case of mania is puerperal mania or not. Certain alienists on the Continent hold that it is possible, they insist especially on the salacity, obscenity, and rise in the sexual instinct generally in cases of puerperal insanity, but these symptoms are also present in many non-puerperal cases.

The English authorities are in agreement that, apart from the history and physical signs of recent delivery, we are unable to say whether a given case of mania or melancholia is puerperal or not.

The insanity of pregnancy is, as I have said, divisible into two different types. The first type is that which occurs before the fourth month of pregnancy, and is generally a variety of melancholia; the longings are increased to an insane degree, and the person is apt to misinterpret the symptoms and signs of her physical condition. This form of insanity is likely to pass off at the time of "quickening," complete recovery usually taking place at that time. On the other hand, the insanity that starts after the fourth month persists, and it is not so likely to get well as that which occurs before the fourth month. It is usually of the type in which the patient considers she is being persecuted. She is depressed and suspicious of those around her, especially of her husband. And let me here say that the prognosis of melancholia generally is not so good when the patients ascribe their misery to others as when they consider themselves to be at fault. The subjects of this variety of the insanity of pregnancy remain *in statu quo* up to the time of delivery. Then they recover for three or four days, and the actual puerperium is passed over fairly well. After that time the patient generally relapses, and gets into her former state of imagining she is being persecuted. Various other mental conditions may follow, such as melancholic stupor, &c., but the usual type is that known as *mania persecutoria.* If

such patients are kept well nourished they improve up to the fourth month, and about the fourth or fifth month they occasionally get well. If they do not recover by that time the prognosis is very bad.

Insanity of parturition or puerperal insanity proper.—Here again it is convenient to classify the insanity into two divisions: (1) the early insanity of the puerperium, and (2) the late insanity of the puerperium. The early insanity may start off suddenly immediately after delivery, but usually it comes on more gradually, and gets worse and worse till perhaps the end of the first week. This insanity is generally a form of mania. Of course we set down rules, but exceptions are not very infrequent. Still, it is convenient to have some sort of rules to go by. The insanity which comes on soon after delivery is generally of the type of mania. If it comes on within the first day or so the chances are that it is of the type of simple mania, with exaltation of the altruistic feelings; the patient takes an interest in all that goes on around her except those matters in which she ought to take an interest. That is to say, she takes a dislike to her own child, to her nurse, to her husband, to the doctor, indeed to all who have been attending her while she has been ailing; but if you see such patients in an asylum you will notice that they take an interest in all the other patients, are always busy about them, and sometimes they are even of real help in taking care of some unfortunate general paralytic or senile dement. Still, at other times it must be admitted that they give considerable trouble. Their behaviour depends upon which particular cases their affections fix upon. If, on the other hand, the insanity reaches its height about the sixth or seventh day, it is generally of the type of acute mania, and this is the type which the Continental, especially the Italian, alienists look upon as characteristic; the patients are apt to be erotic or even nymphomaniacal. They are especially liable to mistake identities, especially will they mistake any man they see for their own husband. The puerperal maniac is liable to have very vivid hallucinations. Many of you in private practice will be quite interested to hear some of the vivid descriptions of some puerperal maniac—showers of golden rain, angels or devils in her room at night, people under

the bed, faces bedaubed with blood looking at her through the window. These patients will answer imaginary voices, and they are apt to be suspicious of everything that goes on around them. Another very important symptom to recognise is that the patient is usually homicidal towards her new-born babe. It therefore becomes essential in the treatment of the case to remove the child from its mother. The general type, then, is an acute mania which, as far as English physicians can determine, is exactly the same as the ordinary type of acute mania in women of a similar age. If the onset of the insanity be delayed till about the twelfth day, the type is again likely to change and become melancholia. The patient begins to feel miserable, takes no interest in her surroundings, takes no interest in her own child, is suicidal, or perhaps is homicidal towards her own child and her husband, or even the nurse. These patients frequently think their baby is dead, or that some other harm has happened to it, and that something dreadful is about to happen to themselves; they may think they have been very wicked and ought to go to prison. As the insanity of these patients progresses they are apt to become more and more suicidal, and at that time they require to have a person constantly with them; they are probably the most suicidal cases with which we meet. Then the puerperal melancholia goes on in the ordinary way, and may or may not get well.

With regard to the prognosis of the insanity of the puerperium, the earlier it comes on the more likely is it to get well, and consequently it follows that the puerperal maniac is more likely to get well than the puerperal melancholiac, because the puerperal melancholiac develops the attack at a later stage in the puerperium. From my own limited experience, I conclude that the most hopeless cases are those which develop acute mania in the third week after delivery.

As regards the physical signs, the maniac goes on quite in the ordinary way. Perhaps the milk may actually increase, but at any rate there is not any very great change in the mammary secretion. The lochia persists also as in the normal individual. The consequence is that when the baby is removed from the mother, care has to be taken of the breasts. In places other than institutions I believe the custom is to give the mother potassium iodide to stop the secretion of milk, or to apply

belladonna plasters to bring about the same result. In an institution for the insane, it is customary to get the nurse to massage the breasts and get the milk out of the hard parts of the breast by rubbing; otherwise abscesses are liable to occur. The melancholiac has many physical signs. For instance, the breasts cease secreting, the lochia stops, and, on account of that, a mistake in diagnosis is occasionally made, in that the insanity is taken for the delirium of septicæmia coming on after childbirth, and this is apparently confirmed by the stoppage of the milk and of the lochia. Curiously enough a case came in during the past week which was mistaken for a case of puerperal septicæmia on account of that. Therefore it is a possibility one has to bear in mind.

From one point of view the melancholiac may be regarded as a very dry person; all the secretions are either at a standstill or are diminished, the mouth is dry, the tongue furred, and the saliva which is secreted is thick and glairy, it is not like ordinary saliva. At one time in this hospital we tried to investigate how much saliva was secreted by melancholiacs, and we arrived at certain conclusions; but when we tried to find out what was the normal amount of saliva we came to a difficulty. The various authorities differ widely in their estimations, varying as much as from five ounces to seven pints. There appears, however, to be no doubt that the amount of saliva is diminished in melancholiacs, and what is secreted is thick and glairy. Again, the melancholiac has a diminution of the gastric secretions. They refuse their food, and this, after all, is only a symptom of loss of appetite. Dr. Greenwood, an alienist in one of the Scotch asylums, washed out the empty stomachs of some of the melancholiacs who were being artificially fed, and obtained from them a brownish mess very much like the fur upon the tongue of a melancholiac or any person who has fever. Again, melancholiacs are very constipated people, and the fæces are very dry, indeed once in every month or so we find it necessary in these institutions to clear out the rectum of some patient with the hand, for the excrementitious material is almost stony in hardness. Moreover, he does not secrete on the surface of his skin, and his hair is dry. This " dryness " is well brought out in cases of puerperal melancholia in the diminution of the secretion of

the milk. I do not wish to say that the lochia is a secretion, probably it is not, but at any rate that discharge does stop in this condition. Lastly, menstruation is absent in acute cases of melancholia.

Insanity of lactation.—Here we have an insanity which is practically only due to weakening influences. Generally it comes on in the later months of lactation, probably in the fifth or sixth month, and the subjects of the disease are, as a rule, people of poor nutrition. It generally starts with giddiness in the head and vague feelings of malaise; there are also noises in the ears, which become interpreted into hallucinations of hearing, and the hallucinations of hearing ultimately give rise to delusions of persecution, in fact they get a type of *mania persecutoria*. Then the *mania persecutoria* passes off with good feeding, and the patients generally get well. The prognosis of these cases as regards numbers is about the same as in puerperal insanity, that is to say, about 75 per cent. recover. Unlike the pregnancy and puerperium patients, the cases of lactational insanity are more likely to recover the later they are in developing.

It is, of course, a little difficult to find out exactly how often puerperal insanity occurs, but it is generally set down at one case in 400—that is to say, one birth out of four hundred gives rise to puerperal insanity.

Puerperal insanity is liable to recur in the same individual.

With regard to causation, of course the hereditary history of insanity is unfavourable. If the first pregnancy occurs after the age of thirty, the mother runs a risk of puerperal insanity. Primiparæ are more liable to puerperal insanity than multiparæ. A woman who has once had puerperal insanity is liable to have it again, the more so if there is any family history of insanity. A subject with a strong hereditary predisposition to insanity, is practically certain to become insane every time she has a child. If she has no children, she may pass through life without a single attack of insanity. On the other hand, she may follow the ordinary type of an hereditary insanity in which the patient breaks down early, probably at adolescence—eighteen to twenty years of age—she recovers fairly quickly and easily. Then she will perhaps break down

again at the age of twenty-five, and again recover. Then she will successively relapse at the ages of, perhaps, twenty-nine, thirty-three, thirty-five, and so on, the intervals getting less and less until the patient finally ends in dementia. The course of hereditary insanity has been compared, very aptly, to a spinning top. When it is spinning it stands upright, but is easily upset. However, it soon rights itself, for a time, and then it sways more and more frequently until finally it topples to the ground and runs away, the toppling to the ground being compared to the permanent condition of dementia. Other causes of puerperal insanity are such mental worries as illegitimacy of the child, desertion of the father, &c.

We will now have in some cases for you to see. I would say that mania, melancholia, dementia, and delusional insanity and stupor have been lectured on,—all those are types of insanity which occur in given individuals and in the course of certain insanities, but puerperal insanity may take any of those forms, in just the same way as may general paralysis of the insane. General paralysis is an insanity which you cannot recognise as general paralysis from the type of the insanity alone, you can only recognise it from the physical signs—tremor, inactive pupils, exaggerated knee-jerks, &c. Similarly, you can only recognise puerperal insanity on the history and physical signs of recent delivery.

The first lady I show you is one of the exceptions to the rule which I mentioned to you, namely, that the puerperal insanity that comes on soon after delivery is likely to be mania, and in the later stages melancholia. This lady's illness came on soon after delivery, she became melancholic and was very depressed, thinking that various ills were happening to her child, and that she was very wicked and ought to be sent to prison. Her depression went on and became more pronounced, and for some time she became extremely suicidal and had to be carefully looked after. She is now recovering, and is more or less in the condition of *folie de doute*, she daily comes up and asks whether she will really get well. She will probably get quite well. As frequently happens, she begins to look upon her coming here as some proof that she has done harm, whereas it is not so. Her history is that a month after her confinement she became very silent, and would

not dress herself or take an interest in anything. She is twenty-five years of age, of sober habits, and there is no insane heredity. On admission she said that she believed that she had no baby and no husband; she could not wash herself, as she did not know where to begin. That is a type of the folly of doubt which Dr. Savage has mentioned to you. It is the same condition as occurs in those people who will sit on the edge of their bed for two hours deliberating which stocking to put on first. She said she had no clothes, and did not know where she was. She said she had committed many crimes, the nature of which she did not know. Still, she felt sure she would be hanged for them. She also said the baby was not hers. She had continual restlessness. She had a good deal of laceration of the posterior wall of the vagina. The inference is that the head of the child was unduly large, and let me here say that male children are more likely to give rise to puerperal insanity than females, because the head of the male child is larger than that of the female. At the same time there are certain mothers whose attack regularly comes on after being delivered of a female child, although they remain free from insanity after the birth of a male. I have already told you that a primipara of more than thirty years of age is more liable to an attack of puerperal insanity than a younger primipara. And, as you are well aware, the head of the child is larger in primiparæ over thirty years of age than in younger primiparæ. There again, therefore, we have an etiological connection between the size of the child's head and puerperal insanity. This patient's memory for recent events was fairly good. With regard to more remote events she felt that they must have occurred, but she did not feel that she had been married or confined. On the 24th May she swallowed a thimble, after having threatened to do it. She said she did this because she did not want to live.

The next patient is a more recent case. Yesterday she had some idea that something was going to happen to her. She probably lost a good deal of blood in her confinement. On admission she was in a very weak condition, and had a very rapid pulse. She hears, as you notice she tells us, her mother-in-law and her husband and nurse talking in the next room, but she cannot tell whether they are talking about her. It is a favourable sign

that her hallucinations are indefinite. Her child was born on the 16th April. Her illness came on a week after the birth of the child, at which time she was very excited and wished to kill it, in fact she attempted to dash it against the wall. She took a dislike to those very people whose voices she says she heard in the next room to hers. When she came in, it was doubtful whether she ought to have been admitted, because we absolutely failed to discover any sign of insanity, but after being here a night she had these hallucinations of hearing. She is very weakly. Any weakening influence is conducive to an attack of puerperal insanity. This you might call an acute hallucinatory insanity; as a matter of fact it is a stage in the process of acute mania. The hallucinations have persisted, but she has become more conventional and behaves herself very well and pays little heed to her hallucinations. She appears to be recovering. The case would not be recognised as having any special characteristic of puerperal insanity.

The next patient says she has been here six months. She says "there was a sort of conspiracy about it," and that people brought her here against her will. She says she expects "it was best in the end if they would give up gambling on the Stock Exchange and give up the property which does not belong to them." She is—as you observe—quite incoherent. Asked who has been gambling she does not know. She is twenty-seven years of age, and there is no heredity in the family. She is constantly talking incoherently and will not answer questions, is very noisy, and at times inclined to strike those about her. She has fancied she was acting on the stage, and has been difficult to restrain and keep in bed. Her child was delivered on Monday, November 28th, and this state developed as a post-partum condition. She was admitted on the 12th December. For two days previously she had been irritable and difficult to please. She kept finding fault with her nurse when there was no necessity. She assured her doctor that he had been very clever in advertising her as a better actress than Sarah Bernhardt, and now that everything was all settled she would go on the stage and startle all London. The labour was a premature one, namely, at seven and a half months, and was quite easy. Vertex presentation, no instruments. The patient did well

for the first week, and then became excited, talked nonsense, and wanted to go on the stage. She was extremely restless and noisy, and seldom answered questions put to her. At times she thinks that those around her intend to do her harm, and hides her head under the clothes. She is erotic, and would not always take her food voluntarily, she has had to be fed with the tube. She was very capricious as regards her food, for sometimes she would take it in the ordinary way. Lochia were not absent.

The next patient was confined on the 10th March, and it is possible that it was partly a septic case. She has sixth nerve palsy, and at one time had third nerve palsy. This, of course, gives rise to double vision. She says there has been something at work at her eyes. Here you observe that the patient's visual defect is magnified into a delusion. She says there used to be people in her room at night, and terrible reptiles which had escaped from the Zoological Gardens. She recognises now that that may have been a delusion. She thought she had done something wrong and had dropped her baby. She says that military men were in her room, and it appeared as if nothing but bloodshed and fighting were going on, the combatants making a lot of noise. She also noticed some strange smells. She thought the military men had the reptiles shut up in the daytime and let them loose about the room at night. She feels so sure of the fighting that she believes that she has handled the sword herself. She is forty years of age. Her eye is anæsthetic, for the lotion could be painted in without any pain or other inconvenience being caused. At the onset there was a large amount of proptosis, and this symptom, as you see, has not yet subsided. She has had a thick brown fur on her tongue and a very rapid pulse, with high temperature. The prognosis in her case is quite good. She was confined in March. She had no anæsthetic, and no instruments were used. Three weeks later she became sleepless and talkative. She suffered from mistaken identity, and had visual hallucinations. Then she developed proptosis and ptosis of the right eye and complete anæsthesia of the right side of the forehead and face. In about three weeks this disappeared, giving place to hyperæsthesia of the same region. The ptosis got better, and the proptosis is now gradually subsiding.

These puerperal cases have shown you types of what I am in the habit of calling the events of insanity. The events I refer to are mania, melancholia, stupor, dementia, and perhaps delusional insanity. The value of putting them together under the heads of puerperal and lactational insanity is for prognostic purposes. As I have already tried to point out to you, the prognosis is comparatively simple in most of these cases. The recoveries in insanity of pregnancy, parturition, and lactation are in each group about 75 per cent. Here you are able to see these various events just as you may in cases of general paralysis of the insane or in cases of hereditary insanity. In a general paralytic you may have exactly the same mental signs as in puerperal insanity, but you know that your puerperal case will probably recover, while your general paralytic will certainly not recover.

I have only shown you four different types, but it is possible to gather together puerperal cases showing simple mania, acute mania, delusional mania, simple melancholia or acute melancholia, delusional or stuporous cases, in fact any type. We may even get cases of dementia. There is, indeed, one recognised type of the insanity of pregnancy which begins in the early months, and rapidly develops into a variety of dementia, so that the patient is demented before the birth of the child. These patients never recover.

I have purposely said little of the treatment of the class of patients which we have been considering. The treatment of any given case differs little from that of any similar case whose causation is independent of the child-bearing state.

In a case of the insanity of pregnancy, the question of the induction of abortion or of premature labour may arise. It is a matter of experience that such operations do not improve the mental condition of the patient, and are therefore to be regarded as unjustifiable.

In a case of puerperal insanity, remember to separate the mother and child on account of the risk to the latter, and remember also to keep watch over the condition of the breasts of the puerperal maniac.

The insanity of lactation is due to anæmic or asthenic conditions. This is the key to the treatment of such cases. Feed them well on a nutritious fattening diet, and if you should be of

opinion that a hæmatinic is indicated, let me recommend you to give preference to arsenic rather than to iron, not only in cases of lactational insanity, but in patients of the neurotic class generally.

THE PRACTICE OF BLOOD-LETTING.*

By J. F. BRISCOE, M.R.C.S.

The Past and Present of Blood-letting.

FROM the days of Hippocrates till now, blood-letting, whether from evil or good report, has held its own among curative agencies. Like the tidal wave, it has ebbed and flowed. In former days it was peculiarly a fashion for the cure of inflammation. Not only did medical men bleed, but it was practised by all classes of laymen. The "barber-surgeons" were particularly skilled in the art; and these and other phlebotomists thus earned a livelihood. The highest grade of society was no exception, for one and all periodically submitted themselves to a bleeding as a surety for health. In 1649 Guy Patin wrote: "M. Walleus, Professor of Anatomy at Leyden, died a few months ago of a malignant fever. He was only bled twice in nine days, and consequently was roasted to death (est mort roti). My son was ill at the same time, but I recovered him from his continued fever by the aid of twenty good bleedings from the arms and feet, and a dozen good purges of senna." Dr. Wilks, now Sir Samuel Wilks, writing in the 'Lancet,' May 23rd, 1891, on blood-letting, remarks that his views confirm those of Dr. Pye-Smith, Dr. Ogle, and Dr. Broadbent (now Sir William Broadbent). He eulogises the practice and says, in quoting a case, "Her life was as clearly saved by the bleeding as if I had dragged her out of the water; and this is more than I can say for the use of drugs." Only recently letters in the columns of the medical journals clearly illustrate to us the advantages of venesection. But yet, although admitting that general bleeding was very much abused in former days, we

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must ask, why is it in our time so rarely practised? Is it that the type of disease has altered, or is it that modern wear and tear of the nervous system has weakened our vital endurance? I cannot believe that either of these is the case, but that venesection, being a very responsible operation, is avoided by the practitioner. He will do it in consultation and admit its value; but, owing to a morbid delicacy, akin to fear, he shuns, not magnanimously, a valuable agent of medicine. We have no exact data by which we can estimate the prevalence of nervous diseases one or two hundred years ago. Nevertheless, the following results may be summarised from Table II, 52nd Report of the Commissioners in Lunacy, 1898.

The struggle for existence would appear to be so keen nowadays that it is not surprising that we see, both in and out of hospital, so many pale-faced, stunted persons. Unless the conditions of life be much improved in the "hives of industry" the inevitable result must be the gradual, but certain, degeneration of our race. When we survey Great Britain's geographical distribution over the whole globe, we are at once struck with the importance of a careful study of heredity. That the State has a great responsibility ahead of it has only too recently been brought before the public notice. It would be well if the Government of this Empire considered the advisability of amending the marriage laws, affixing a clause that "no degenerate subject of the Queen should be allowed to contract a matrimonial alliance with another person who is by heredity equally unhealthy, or with the offspring of parents whose genealogical record is decidedly 'unsound.'" Surely, if a nation has to foster degenerate beings in expensive model institutions, why, on the other hand, does it not forcibly legislate on the first principles of prevention? The Greeks and Romans, we are told, had a truer idea of the proper mode of cultivating the mens sana in corpore sano than we have; for with them bodily and mental training went hand in hand, and phisolophic disputations and athletic sports were usually carried on pari passu in the same places. With an apology for this digression I will continue the subject of my paper from a controversial aspect.

In the days of our forefathers venesection was notoriously a fashionable remedy, and, like all remedies, was very much abused. It was con-

sidered a panacea for all the ills of the flesh; in fact, if one peruses the medical journals of that period, there is not a disease for which blood-letting was not applied. The whole domain of medicine and surgery was swept with the lancet, and it is not surprising that the medical journal, the "Lancet" came into existence. But the heated disputes among the profession, the abuses of the practice, and an enlightened age dawning upon the medical world, distinctly gave a blow to blood-letting. The public took the matter up, coroners condemned the practice, and it was decried from the pulpit. Further, to add coal to the fire, the death of Count Cavour, in 1861, who was a great patriot and most enlightened statesman, added another element of despair. This Italian sceptic was bled seven times; and he had

profession. These theoretical strikes are frequently astir amongst us, and a settlement is no easy matter. The modern revolution in surgery is a good instance, and there are many of us who well remember the attacks on the carbolic spray. However, out of evil comes good, and there can be no doubt as to the unanimity of opinion with regard to modern surgery. But, to return to the death of blood-letting, we must, one and all, regret that the art has been lost. So decided was the death-blow on the appearance of this new era of medicine that practitioners refused to bleed. Not only so, but it was looked upon almost as a murderous act. Yet, considering the abuses of blood-letting by our forefathers and the change of type theory, have we not in this day gone to the other extreme? I firmly believe, even in our own time,

Date.	Population estimated for the middle of the year.	Total of officially-known lunatics.	Number per million of population.	Number of persons to one such lunatic.
1859	19 686,701	36,762	1867	536
1869	22,223,299	53,177	2393	418
1879	25,371,489	69,835	2754	363
1889	28,447,014	84,340	2965	337
1898	31,397,078	101,972	3248	308

already declared in Parliament that everyone should be free to choose whom he pleased for his doctor, whether phlebotomist or pork butcher. This meant, in other terms, that in medicine all doctors were of equal value, and of no more account than quacks. More is the pity that remarks of this kind should emanate from such high officials; yet is not Society in this day very much that way disposed? That a titular distinction is not always the qualification of a learned physician or surgeon is inevitably the result of the ignorance of those who dwell in high places; but to condemn a practice because a notable person has succumbed to it is strikingly weak. Yet, although these things were sufficiently alarming and produced a revulsion of feeling in the public mind, there was at any rate a distinct change in medicine. For, what with the statistical-method point of view and the change of type theory, a rebellion, as it were, arose in the theatre of the

1899, that a moderate bleeding, cæteris paribus, can do but few people little harm; for, by carefully operating, the quantity of blood may be considerably diminished without any dangerous symptoms In adults the bulk of the blood is variable, but it is about 1-13—1-14 of the weight of the body. The faster the bleeding the more dangerous it is. The loss of blood to one fourth of the normal quantity has no durable sinking of the blood pressure, but a loss of one third reduces the blood pressure considerably (Phy. Chemistry, Hammersten, Mandel). There have always been disciples of the lancet, and at the present day there are many physicians of note who judiciously practice the art; but the few in general practice who are adepts at blood-letting have either an hereditary tendency that way or have been thrown with a blood-letting practitioner. It is, however, to those who despise the "barber's stick" that I attempt to approach, and to try and convince them

that blood-letting is as urgent an operation for the relief of the circulation as tracheotomy is to the relief of the respiration. Moreover, it is necessary that we should clearly appreciate the action of blood-letting and not compare it with the ordinary drugs of the thereapeutist. It does not destroy the micro-organisms or the toxins of inflammation, but effects other secondary and tertiary consequences which arise therefrom.

Again, it acts on certain diseases of a non-inflammatory nature, confirming the fact that venesection is not a cure for inflammation. Considering the subject practically, physiologically, and historically, we have plenty of evidence to corroborate this statement. Besides, it would appear to turn aside those profound pathological changes which arise in acute or passive disorders. But to classify diseases which come under the heading of blood-letting is hardly to be expected in a *brochure*, and more particularly when hæmatology is only a new study. Further, the cell of the protoplasm and the blood being relative, if there is inherent instability in the former, the composition of the other, the pabulum, however standardised it may be, can hardly be expected to make good a badly-created organism. Short-lived or long-lived cells would appear to be an hereditary peculiarity, and the strength of the vital forces of the animal would also appear to be laid down in the original cell. But there are abstruse circumstances in the life history of an animal which do materially affect its best interests. These are either congenital or acquired and tend to the promotion of disease.

It is very difficult to explain the action of any particular therapeutic agent, yet over and over again blood-letting has saved the life of the compound organism. If we could bring to bear on the subject minute anatomy and physiological chemistry, and were able to gauge by these sciences those morbid delicate pathological appearances, which the microscope reveals, we should then near the goal of our ambition. As yet, there are only about six diseases in which blood examination gives us a ready-made diagnosis. We should likewise be enabled to explain away theories which the professional mind is frequently engaged upon. For instance, "the change-of-type" theory in 1844. An epidemic of typhus in Edinburgh, considered from the statistical point of

view, led Dr. John Reid, pathologist of Edinburgh Infirmary, to prove that this change-of-type theory could not be accepted. A few years previous to this date, 1832, there was an advance in physiological knowledge, and thus a change in practice on the dawn of a new era in medicine. As touching the blood, Prout, Audral, Magendie, and Liebig, and a host of other observers, created quite a furore in the minds of physicians at this time. Their theories considerably arrested the blood-letting treatment. But as Dr. Markham, formerly physician to St. Mary's Hospital, Editor of the 'British Medical Journal,' and Gulstonian Lecturer for 1864, says, in writing on the 'Uses of Blood-letting in Disease':—"A well-known writer (Buckle) has stated words to this effect, that there is no example in the world's history of a theory having been put away through observation of the practical evils which it produced. Change in knowledge comes and upsets the theory, and not till then do men see the viciousness of the practice." Dr. Markham observes that he believes we find an apposite illustration in the case of blood-letting.

Volumes on the usages and practice of blood-letting might be written, and it would be a task of no small dimension. It would involve the weighty consideration of the collateral sciences, and a thorough acquaintance of anatomy and physiology, with a complete knowledge of the causation and pathology of disease. The normal circulation is dependent upon the quantity and composition of the blood and a healthy heart and sound vessels. It is also very closely associated with the other systems of the economy that it can hardly be studied apart from them. As a derivative, blood-letting will always occupy an important position, since capillary attraction, an important physiological function, is decidedly encouraged after a bleeding. The muscles and all the tissues of the body become obviously drained, and thus pathological depositions are carried along the gutters of the circulation. This, then, is the main object of venesection, namely, the relief of congestive areas. But the quantity to withdraw in each case, and the exact period to bleed, must frequently be determined by the judicious surgeon. It has never been laid down how much of an anæsthetic is the proper quantity; and so with bleeding, each case must be treated on its own

merits. However, 20 oz. would be a maximum with few exceptions, at one sitting, but in many cases a less quantity answers the object of the phlebotomist. The enormous abstractions of blood which were formerly practised, and the periodical bleedings for health's sake convince us of the value of blood-letting. It is the final agency in the resuscitation from irrespirable gases, and it is a measure requiring the utmost skill in the last propulsive efforts of the distended circulatory system. Moreover, it averts the profound pathological states in convulsive seizures, and it seems to be the only saviour of an hæmorrhage into the central nervous system. But to advocate blood-letting in skin diseases, abdominal tumours, and a host of other complaints, would only weary you with a reiteration of the errors of the past; a past with a history, which although frequently wrong, has left on the sands of time useful knowledge for our instruction. So that in the experience which we have gathered from our forefathers, we should avoid repeating the same mistakes which they intuitively practised. Before closing these brief remarks on the past and present of blood-letting, I would add that time does not permit me to deal with the whole subject *in extenso*. However, in the near future I shall consider the methods of blood-letting, conditions indicating blood-letting, illustrative cases, and the pathological problem in asphyxial states of the system. Finally, I do not know of any surgical procedure that requires such a thorough acquaintance with the ætiology of disease as that which blood-letting demands.

Methods of Blood-letting.

These consist of scarification, leeching, cupping (dry and wet), arteriotomy, and true venesection. The two first are purely local agencies, the third and fourth a little more extensive in their action, while the art of venesection is for general purposes. When blood-letting is indicated, and the seat of the disturbance is deeply placed, the topical agents frequently fail to give relief. To those who practice leeching and cupping, the behaviour of these remedies are expressed in those internal inflammations where there is a distinct capillary connection between the skin and the internal part affected—for instance, the inflamed pleura and the parietal layers

of the serous membranes. In fact, we must follow the teaching of the late Mr. John Hilton in his work on " Rest and Pain." So that, anatomically considered, we should not leech or cup from the loin in kidney affections, since a local blood-letting in this area would not receive a drop of blood from the deep-seated organ beneath. I give this example particularly as one of many instances, for I have read in a text-book that cupping is recommended in kidney affections. These two methods of blood-letting are therefore distinctly local remedies and, as such, were formerly very much used. But at the present time the cupping glass and the accompanying instrument, the scarificator, are rarely seen except by a few practitioners. But should the physician prefer this resolvent remedy to that of any other derivative, and if he is skilled in its use, he may in due season find it an advantageous method. That the operation requires much skill is well known to the older practitioners. For a novice, however, cupping and leeching are decidedly irksome, and often unsatisfactory in their results. Besides, unless very skilfully performed, the application is very trying to the patient. However, as a paramount remedy, and where heroism is a feature in the treatment of pleurisy and other like affections, a decided blow may be given by a wet cup. Yet so rapidly fatal are some of these congestive seizures that, before the acumen of the physician can be brought to bear on the case, the patient is dead. As in venesection, so in cupping; a student's early training may have brought him in contact with a skilled cupper, and thus he has learned to apply the art and has subsequently practised it. This is so with the leech. Now the question arises, whether the small amount of blood extracted by these measures answers the purpose of the physician. Although there is the artificial leech, I doubt very much the support I shall get from this line of treatment. Some of you may perhaps for convenience prefer another remedy in the extensive *rôle* of the derivatives. Yet the few who still employ leeching are aware of the difficulties attending the art. Moreover, it is rarely seen in the druggist shop, and, being loathsome and awkward to apply, is not apparently in favour with the modern school of medicine. Since the art of cupping and leeching are unsystematically studied in the schools.

the many nice points in the management of the leech and the cupping instruments might claim for them almost a seat in the " Specialities." Thus successful results in this practice would appear to fall to the adept. So much, then, for the indirect method of blood-letting.

Very few, if any, surgeons carry lancets in their waistcoat pockets as was the custom heretofore. The instrument is, like the old stethoscope, becoming a thing of the past. If used in the direct method of blood-letting it should be sharp, but the place of the lancet can be conveniently filled with a suitable keen scalpel. Venesection, or the direct method of blood-letting, either with a sharpened lancet or a scalpel, is much more satisfactory than the indirect methods of blood-letting. As the operation is often one of urgency, as much care and presence of mind is required as in all operations of expediency. There are some subjects, owing to an excess of adipose tissue, or want of fulness in the veins, that frequently hinder a successful incision. This want of distension may be the outcome of neglecting to compress the arm, so that a retardation of the current does not occur. But, on the other hand, the compression may be so complete that, although the veins are full, the flow of blood is stopped by the tightness of the ligature around the arm. Another point worthy of mention is to incise the vein in its transverse axis in a semilunar curve, otherwise, from obvious reasons, when the vein is opened in its longitudinal axis, there is an imperfect escape of blood. If the surgeon is unable to get a venous flow after the incision is made he must wait a bit; but he has no right to excuse himself by opening an adjoining artery. This I once saw, and obviously the case did not turn out satisfactorily. The patient's end was accelerated by loss of arterial blood and the paralysis of the right heart unrelieved. Of course I am speaking of a case where venesection was required and not arteriotomy. Again, the skin wound must not be larger than that which directly exposes the vein. The stream of blood can be encouraged by shampooing the extremity, or the extremities, when there is extreme cyanosis from asphyxia. If the bleeding is at the bend of the arm, flexion of the joint encourages the jet. Violent rough handling is prejudicial, and particularly when the circu-

latory obstruction is all but completed, as in the last stage of asphyxia. The recumbent posture with the head low is physiologically the most desirable attitude in venesection, because the shock from emptying the vessels may produce a syncope sufficiently alarming to the practitioner. Yet it may be necessary in some cases to alter this attitude to a more erect posture.

The profound pathological disturbance which occurs after suffocation, producing, as it does, paralysis of the circulatory system, leads me to emphasise the importance of studying the details of venesection. The vein having been opened, secundum artem, and blood not flowing, the adjuvants to venesection must be resorted to. These are: artificial respiration, nitrite of amyl, the administration of alcoholic diffusible stimulants, smelling salts, massage, warmth to the extremities, and quietude in a darkened chamber. These are to be applied and considered according to the merits of each case. As in the operation of " tapping " for ascites, so in venesection, the flow must be regulated and must not be too rapid. Although we attach importance to these adjuvants in suspended animation, yet we are compelled to state that frequently these supernumerary agencies fail us. If we did but practice the science and art of venesection in a larger number of asphyxial states of the system, we should have happier results. Nitrite of amyl and such potent agents are the sheet-anchors of a few practitioners; and there are chloroformists who pin their faith in this remedy alone, while others prefer electricity or the wet douche. In the minority must be those anæsthetists who strike the back of the head, so as to rouse a syncopal chloroformed subject. However, I once saw this done in the Antipodes with success, as a means of exciting the respiratory centre; yet I question whether such an extreme doctrine would be justifiable even in opium narcosis.

I have described concisely the usual methods of blood-letting, but the operation of arteriotomy, if advocated, would reasonably appeal to some as a procedure in a case where the left heart is affected, and for relief of that side solely. It is recommended in apoplexy, the temporal branch of the carotid being suggested as the vessel to open. Yet I think equal results accrue from venesection with less hazardous consequences. Before con-

cluding my remarks on the methods of blood-letting I should like to refer to the practice of artificial respiration. I cannot believe that long-continued artificial respiration for one hour or more is scientifically correct. For when we consider the cause of a frequent concomitant to the check of the respiratory act we shall perceive that it is resident in the circulatory system. If the *materies morbi* have broken the escapement wheel of the respiratory centre, or rather paralysed its action, as soon as a vent is made for a discharge of the peccant matter so much the better. Further, the abstraction of blood from the gutters of the circulation would appear to encourage indirectly a healthy metabolic interchange of gases. The normal chemistry of respiration is dependent upon this interchange of diffusion; on the one side is the blood and air of the lungs, while on the other the blood and lymph and the tissues. The subject is of such vital importance that we are prepared to state that the chemistry of digestion is a secondary matter to that of the chemistry of respiration. If the laboratory of the air chambers is inefficiently working, the whole machinery of the animal comes to a standstill. Like a fish out of water, the animal becomes suffocated.

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XXII.

GENTLEMEN,—Fatal poisoning by fungi is in this country rare, and it seems to be sufficiently rare everywhere. There is one of these fungi which is very strongly poisonous, and that is the *Amanita muscaria*, or fly fungus, which gives us the alkaloid which you hear of in your physiological lectures—muscarine. The fly fungus is almost precisely like a mushroom, except that it is red. Muscarine has an action very like that of pilocarpine, the active alkaloid of Jaborandi. It depresses the heart and contracts the pupil, and causes salivation, and the mode of death from it is usually heart failure. This body muscarine is said to be consumed as a luxury in some parts of Eastern Asia. The craze for muscarine is said to be so great that, in order to enjoy it, the poor are con-

tent to drink the urine of the rich. A case of poisoning by it occurred in 1859 at Corte, in the island of Corsica, when five French officers were killed from eating fly fungus. They suffered from gastro-intestinal symptoms, and a foolish delirium in which the victims simply did silly things. Then stupor came on, and then convulsions, followed by death from cardiac failure.

Passing from vegetable irritants we come to the animal irritants, one of the chief of which is *cantharides*, or the Spanish fly, *Cantharis vesicatoria*. It is used as a counter irritant, and has also the reputation of being an aphrodisiac, but whether it is or not I should say is more than doubtful. The only direct evidence we have is that if cantharides be given in sufficiently large quantities it causes intense irritation of the genito-urinary tract, including stranguary and painful priapism, which is a very different thing from aphrodisia. There is no doubt that cantharides may cause intense irritation of the kidney, and, if it is given in large quantities, may produce hæmaturia, with swelling of the kidney, suppression of the urine, and a condition not very distinguishable from acute Bright's disease. There is also no doubt that when large blisters have been negligently applied to persons suffering from kidney disease that the kidney troubles have been intensified. The detection of cantharides in the body depends upon finding in the intestines some of the bright shining particles ; one may make an ethereal extract of the contents of the intestine, and try the blistering effect upon the skin.

We now come to a question of very much greater importance amongst irritants, namely, *irritant food*. And I want to say something not only about irritant foods, but about food poisoning generally. There are many forms of food poisoning apart from purely irritant poisoning. The first form of food poisoning which has seriously occupied medical attention was the so-called *sausage poisoning*, which used to occur in Germany. On this point I should like to say that I make no reference to trichinosis, or the occurrence of trichina in uncooked pork or sausages; that is a matter which is quite outside my course of lectures. What I have to deal with is a poisoning from food occurring under certain conditions. Sausage poisoning has occurred in Germany in the form of limited epidemics. Sometimes whole

households and families have gone down, and occasionally whole villages have gone down with it, and the trouble has been traced to the consumption of sausages. The Germans have made the sausage a speciality in the way of food. Whereas the inhabitants of the British Isles generally are in the habit of providing for the winter by making bacon or hams, or salting pork or fish, from time immemorial, the Germans have gone, perhaps, ahead of us, and have made sausages, and these sausages are made in a peculiar way. Ordinarily, the sausage is made of chopped pig-meat, which is mixed with certain antiseptic herbs, and the German sausage is not cooked, but is dried. In Wurtemberg and Baden the custom has been to dry such sausages in the chimney, to smoke them. If the sausage be made primarily of good materials, if it be made not too moist, if it be made not too big, that is to say, if the diameter is not too great, if it be put in a chimney where the fire is continuously alight, where it is exposed to pyroligneous acid and other antiseptics of the smoke, it remains perfectly wholesome. But if these processes are carelessly carried out, and if putrefactive changes are set up in the sausages, you may get dangerous results. The causes of sausage poisoning are said to be, first of all, putting unwholesome material into the sausages—meat which is already bad. Secondly, sausage poisoning has occurred particularly where the ingredients have been too fluid, where there has been an excess of brains or blood, and you get a semi-fluid mass in the skin instead of a proper sausage. A third cause of trouble is having the sausage too big, for, when that is the case, the drying process is not thorough, and the centre of the sausage is apt to undergo putrefaction, or allied changes, on account of its moist state. Sometimes the sausages have been put in the chimney of a cottage, and the fire is allowed to go out, so that the sausages get frozen and then thawed again, and thus putrefactive changes are favoured. Now, sausage poisoning is not merely an attack of gastro-intestinal irritation, a mere stomach-ache from eating bad food; far from it. Sometimes the symptoms of gastro-intestinal irritation have not been at all pronounced, though sometimes they have been pronounced. The symptoms which have been occasionally most prominent have been the nervous symptoms—dilata-

tion of the pupil, formication, and tingling, double vision, paralytic symptoms, convulsions, stupor, and so forth, very often accompanied by violent diarrhœa. It is only recently that we have really learnt to comprehend food poisoning. It is a well-known fact that in all organic matter, under certain conditions, bacteria will grow, and it is well known that these bacteria in the process of growth cause a brewing of toxines. There is no doubt that sausage poisoning, and food poisoning, to which I am going to allude presently, are due to the formation of toxines in the food. This knowledge is due to Dr. Ballard, who was one of the inspectors of the Local Government Board, and a former student at this college, and one of the most distinguished students that this college has ever turned out. Dr. Ballard was the first to work out the whole question of milk epidemics. I need not go into that, or what it means, but we owe to Dr. Ballard the knowledge of how milk epidemics of typhoid, scarlatina, and diptheria were caused. Dr. Ballard, in a paper which he published not very long before his death, collected a large number of cases of food poisoning in this country, all since 1880. In 1880 he investigated a case in which there was a sale at Welbeck on the Duke of Portland's estates, and, as a preliminary to the sale, there was a great luncheon, including cold hams; and a very large number of people who partook of those Welbeck hams were made ill, partly with nervous symptoms and partly with symptoms of gastro-intestinal irritation. Some of these cases died. Then cases occurred at Nottingham from eating cold baked pork. Then cases occurred from eating cold sausages. Cases have also occurred from eating cold pig's tongue, also from eating cold mutton pies. It has been found in one case that, with some article of food which was served from a cook's shop—I think it was cold pork—there were served lumps of "cold gravy," and that cold gravy proved fatal to a certain number of people, and made a large number ill. There was another case, a notable one, where a party in the north assembled for a wedding breakfast. It was a smart affair; there were no end of glazed tongues and glazed hams, and things of that kind. A large number of the people who partook of these articles of food were made seriously ill, and some of them died. It is, of course, a well-known fact that occasionally pies, especially cold meat pies,

have caused death, and the explanation of that has been a riddle. It used to be said that cooks made a hole in the pie " to let the devil out," a superstition based upon the fact that pies have sometimes caused trouble as articles of diet. It has been universally acknowledged that there are certain articles of food which are liable to be unwholesome; one of these is pork, and the other is veal. We have often heard of people being made ill by pork and veal. Now, if we take the pork pie, the veal pie, cold ham, cold tongue, &c., what is there in common? Ballard pointed out that there was one thing common to all these, and that was gelatine, and he also pointed out that gelatine is universally employed by the bacteriologist for the cultivation of bacteria of all kinds. The next thing which Ballard pointed out was that these food poisonings almost always occurred with cold articles of food, and mainly in cold gelatinous articles of food, which have become the cultivating media for noxious bacteria. Thus the whole thing is quite comprehensible. Two or three years ago, in the country, one of the local doctors, who was also medical officer of health, called upon me, and told me of an incident which had been causing some local excitement. A clerk in the city, who had a cottage in the country, brought home with him on Saturday a leg of pork from the stores. This leg of pork was cooked, and part of it eaten for the Sunday dinner, and nobody who partook of that pork for the Sunday dinner took any harm. Some of it was eaten on the Tuesday, and it caused a certain amount of gastric irritation, and accordingly the remains were given away, and of those to whom it was given three who ate of it died. All the local tradesmen, of course, pointed the finger, and said, " That comes of buying things from the stores." But it was not that, and I remember the medical officer of health asking me about it, and I said, " You will find it was not the hot pork, it was the cold pork which caused the trouble. Go and find out where the cold pork was stored." He found it had been stored in a place which went by the name of a larder, under the stairs, communicating by a ventilator, on the one hand, with a dog kennel, which had never been cleaned out, and, on the other hand, with a trapped gully, which was as foul as trapped gulleys usually are. This cold pork, therefore, was put between two

fires, if we may say so, of microbes, and the result was that the people who ate of it died. It is usually cold food which causes most mischief, but not exclusively. You must remember that if meat, especially the young, gelatinous meat of the calf and the young pig, has been kept before cooking in an unwholesome place, it may become a nidus for the growth of bacteria, toxines are produced, and these toxines may not be destroyed in the pot, and may produce acute poisoning. Food poisoning is of two classes, that in which the toxin ready-made is swallowed, in which instance you get no incubative period, or only a very short one; and the other, in which you swallow the bacteria, which are ready to brew toxines in the incubating chamber which every man carries about with him, that is to say, the abdominal viscera. In that case, if the bacteria are swallowed, there is an incubative period before the toxines are brewed and absorbed, and the toxic symptoms produced. The whole matter is so simple that we are very apt not to give sufficient credit to the man who first pointed out what the cause of this food poisoning is.

These food poisonings sometimes occur with preserved provisions, the sale of which is increasing enormously. There is a chance that the tinned food may not have been scientifically and thoroughly sterilised in the process of tinning, and that toxines may be brewed by the growth of micro-organisms in the tinned food. One thing is very important: never eat the contents of a tin of food which is bulged. When foods are tinned, and are subject to sterilising heat, the tops are soldered on while the thing is still hot, and, then, as the cooling takes place, the top of the tin collapses. Every satisfactory tin of provisions ought to be collapsed on the ends. If, however, in filling, sterilisation has not been complete, then putrefactive changes may occur and the tin gets bulged. I warn you that these dangerous articles of food are not always nauseous. The liquefaction of the gelatine is a sign of danger, unless we are satisfied that such liquefaction has been caused by heat and not by microbes.

Now, a great deal has been written on this subject, and the name of " ptomaines " was given to bacterial products when the subject was first investigated. It is derived from the Greek " ptoma," a corpse. The poisons were supposed to be those

which are brewed in the dead body, and in dead materials generally. The subject of ptomaines excited very great interest, because many of the ptomaines gave reactions very similar to, and hardly, if at all, distinguishable from, the reactions given by alkaloids. And the question was whether the chemist, in searching for alkaloids in the dead body, might not be hopelessly put off the scent, or come to wrong conclusions, because of the ptomaines in the body. Then, ptomaines were also spoken of as leukomaines, because many of them were grown in albuminous matter, notably white of egg. Then, a great variety of names were given to poisons brewed on different bodies. I think it is better to use the general word toxin, and then the whole thing falls into line with the diseases which are caused by bacterial toxins, such as enteric fever and diphtheria.

Then, growth of fungi and bacilli on food has often caused widespread trouble. Yesterday I gave instances of epidemic troubles from the growth of fungi on rye and other cereals, and, in the same way, the eating of mouldy maize is said to have caused, in the North of Italy, some parts of France, and elsewhere, a disease known as pellagra, characterised by mummification of the skin, and degenerative changes in the nervous system. We know shell-fish are particularly liable to cause limited epidemics. I do not allude to enteric fever, which is sometimes dished up with oysters and mussels caught at the mouths of our rivers; nor do I refer to cholera, which is sometimes dished up in the same way. Very extensive mussel poisonings have taken place, and it is said that they only occur when the mussels have fattened in an unwholesome spot; that, if you take the mussels from the open sea, they are safe; but if you take them from places where the water stagnates, such as the enclosures of harbours and docks, they are liable to be unwholesome. Any of you who have made an ocean voyage, and have seen the fæces, and other forms of refuse of every kind, which an ocean steamer leaves behind it, will readily believe what the water of a dock will come to, and it is no wonder that the mussel is unwholesome when grown under such circumstances. Then, in regard to this question of ptomaines, there is an interesting thing recorded by Professor Victor Vaughan, to which I have alluded previously, and to which I will allude again.

It was found by him that tissues impregnated with arsenic, if allowed to decompose, gave off a garlicky odour, and the arsenic disappeared. Victor Vaughan says he kept chopped liver containing arsenic in a bottle, and it was noticed that whenever the bottle was opened a large amount of gas escaped, and that, at the end of six months, he could get no evidence of arsenic from that liver, showing that, owing to the growth of organisms of some kind, arsenic had entered into combination with the gases of the air, and had escaped. One other point is that Dr. Dixon Mann pointed out, and the same thing has been pointed out by others, that some of these ptomaines which are brewed by decomposition are volatile, and Dixon Mann noticed that after he had been working at this subject he was very drowsy. It was clear that he had absorbed some volatile product which was noxious to him. Surely that need not surprise us. We know that micro-organisms during their growth, especially when there has been very much water and there is putrefaction, may brew carbonic acid, sulphuretted hydrogen, and marsh gas, to speak of no others, and under these circumstances we must regard these gases as volatile toxines. That forces the reflection upon us that the chemist knows absolutely nothing about the great majority of stinks. He can tell us that there is carbonic acid there, and that there is sulphuretted hydrogen there, but we know a great many smells are not pure carbonic acid, and they are not pure sulphuretted hydrogen; they are something of the composition of which we are profoundly ignorant. Some of you may remember that, a few years ago, there was a tropical plant of the arum order growing at Kew Gardens, and those who were knowing in such matters were aware that this arum, which has male and female organs ranged one above the other, needs for its fertilisation the assistance of a beetle. And those who knew were aware that when the physiological moment came, when it was ripe for fertilisation, it would brew a stink strong enough to bring a beetle from half a dozen miles. As predicted, so it came off. The smell of this thing only lasted for a short time, and, just at the physiological period, when fertilisation could be accomplished and was necessary, the stink was so strong that nobody could possibly go into the house where it was growing. They took a young and stalwart gardener, and got him to try to take

the temperature of the flower at the time, and they put clips on his nose, and sent him into this place, but he could not do it; the odour was so powerfully depressing that he had to relinquish the effort. Chemists know nothing about these odours, and the gaseous things which are brewed not only by microbes but by flowering plants is something to excite our wonder. There is a good deal we have to accept. How did this plant brew this odour all of a sudden? Then, again, there are odours which, if we stopped with them long enough, are potent enough to make us vomit. How do they do it? Again, there are odours given off by organic bodies which are perceptible after twenty-four hours in the fæces of the person who has been immersed in them, as in *post-mortem* examinations, or what not. That, I take it, is an experience which all pathologists have recognised, and no pathologist I have talked to has failed to say that occasionally during the act of defæcation he has become aware of the peculiar smell of the *post-mortem* examination which he made, perhaps, twenty-four hours previously. What is that? Did he swallow it, or did he inspire it? You may be sure that that odour, whatever it was, had become incorporated with the body, and was eliminated again, just as arsenic, or mercury, or anything else may be. I mention these things to show there are many things in heaven and earth that we cannot explain, even in phenomena of every-day life. To speak of gaseous toxines is perfectly true, though we may not be able to analyse them.

It is perfectly true that "What's one man's meat is another man's poison," and we now get back to the question of idiosyncrasy. Some people are very fond of putrid food. The true epicure will eat what I should call filth, for it almost amounts to that. A haunch of venison, which some people call ripe, and which I call rotten, is something too awful, but that is a matter of opinion.

Now comes the question of the treatment of these cases of food poisoning. Generally elimination takes place spontaneously, and the first thing you have to remember is not to check it. Secondly, you have to support the patient, and in these cases usually large amounts of stimulants may be given with advantage.

Before leaving the question, I will allude to one other fact with regard to food poisoning because I think it is important. In the year 1888 there was at Middlesbrough an epidemic of pneumonia, and this epidemic was investigated by Dr. Ballard. He found that the idea was generally prevalent throughout Middlesbrough that the pneumonia was largely amongst those who had eaten a particular form of bacon. That was quite a new departure, and Ballard, with his open mind, investigated the matter seriously. He found there was a great deal of truth in this, and when he had collected all his cases of pneumonia, he found a large proportion of them had partaken of a particular brand of bacon. He found that the working men and artisans of Middlesbrough had the idea, which is probably common, and I should not be surprised if it is tolerably true, that if you want to get the most good out of meat it must not be over-cooked, it must be underdone. He found the Middlesbrough artisans had been in the habit of eating this bacon very underdone indeed—almost raw, just warmed before the fire. He found that the bacon was made from American pork rapidly cured by a process of injection, or something of that sort. These rapid methods have given us food, but not such as an epicure would regard as bacon. Ballard found that this pork was being prepared in an unwholesome place, in a factory in which there was a sewer grating. He scraped the fat of the grating, and sent up some of the fat and some of the pork to London to Dr. Klein, who found the ordinary diplococcus of pneumonia, and another one which was capable of giving pneumonia, and which produced an epidemic amongst rabbits and guinea-pigs, and killed a great number of them. The point is, was the pneumonia caused by eating pork? There is some doubt about the matter, and I notice in recent writings this particular question has been dropped; and it has been dropped, I take it, because the idea is rather general that this pneumonia in 1889 at Middlesbrough was really the first occurrence in this country of the infectious pneumonia with which we have become particularly conversant while the epidemic of influenza has been about. Since then we have all got to recognise that pneumonia is very infectious. Nevertheless, I think Ballard's figures are incontrovertible, that pneumonia did occur in excessive proportion amongst the pork eaters, and a dangerous bacillus was found on this pork, especially in the fat which was scraped off the sewer grating. Ballard was an observer for whom I have such a profound respect that anything he put forward, I would not say was *certainly* correct, but a statement to be treated with great respect. And I am inclined to think that amongst the forms of food poisoning, after Ballard's researches into this matter, we must include a form of pneumonia. That is a very important fact.

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WITH DR. DONALD HOOD IN THE WARDS OF THE WEST LONDON HOSPITAL,

May 18th, 1899.

A Case of Leucocythæmia.

THIS man, aged 31, had been in indifferent health
for some months before admission. He has been
under observation for two months, his complaint
being simply want of strength, shortness of breath,
general lassitude and enfeeblement. After suf-
fering in this way for several weeks he noticed
that his abdomen was swollen and felt hard. He
consulted a medical man, who sent him into the
hospital. On examining the abdomen we found
the left side occupied by a large, firm, resisting
tumour, which, from its position and resistance,
can be nothing else but an enlarged spleen. It
extends from the lower ribs to the pelvis, and
extends very slightly over the median line. It
has a rounded edge; no very distinct notch can
be felt. It is one of those conditions which one
meets with in connection with so-called leucocy-
thæmia. The largest form of spleen is developed
in this disease. With such enlargement of spleen
there is, as you know, certain peculiar conditions
of blood. This man's blood has been examined
on three occasions. A stained specimen is placed
under the microscope for your inspection. At
the first examination after admission the hæmo-
globin was 53 per cent.; red blood-corpuscles
2,262,000, that is to say less than half normal;
leucocytes 687,000, showing an enormous propor-
tion. There are present three classes of nucleated
red corpuscle—the large, the small, and the
normal. You will also observe the so-called
marrow cells and white corpuscles, full of granu-
lar matter. In fact, this patient represents in
every degree the most typical form of leucocy-
thæmia. He has improved under treatment, but,
as you are aware, these patients do improve under

arsenic and rest, but the prognosis will always be very unfavourable. He is now taking 11 minims of arsenic three times a day. When taking arsenic in large doses you must remember that patients frequently suffer from diarrhœa; you should leave off the drug for a few days if such be the case. You must also bear in mind that these patients are also subject to hæmorrhages. After this man had been in the ward a few days he had a tooth removed, and we had some trouble in stopping the hæmorrhage. On looking at the man in bed you would not call him anæmic; he has none of the characteristic appearance of that disease, and yet his blood has an enormous quantity of white corpuscles. You will see that his lips and mucous surfaces are red.

Fibroid Disease of Lung.

This man, aged 42, has only been in the wards a few hours. He has been ill for some months, and has been laid up in the infirmary nine months from what is believed to be neuritis following alcoholism. He was sent here as a case of acute pneumonia. With this diagnosis one naturally expects to find the clinical phenomena accompanying that disease. The symptoms here, apart from the mere physical condition of the chest, are not those of acute lobar pneumonia. The temperature alone would make us hesitate before expressing such an opinion. It was 100° on admission, and fell the following day to below the normal. It has risen again since morning, but is not high. The man is white and anæmic, wanting in nutrition, and thin. He has not much cough; he tells me he is not wasted. On examining the chest we find that the whole of the left side is dull, and on further examination this dulness is found to be due to a solid lung. You will hear tubular breathing and quite a mixture of minor sounds. It is well for a moment to look at pneumonia from a generic point of view. There are two distinct species of the disease. Acute lobar pneumonia is one which has a striking clinical history of its own:—sudden onset, high temperature, violent derangement of the nervous system, acute noisy delirium or drowsiness; not necessarily much cough, and not necessarily much expectoration. The absence of these two symptoms may mislead you when examining a patient with acute lobar pneumonia

for the first time. You find a patient very ill. You auscultate the chest, but hear nothing. You ask if there is cough and expectoration. These symptoms may be wanting, and yet the case is one of acute lobar pneumonia, a pneumonia which is commencing deep in the lung and gradually coming to the surface. Up to the fourth day you may examine such a patient as carefully as you are able without detecting any symptoms which are pathognomonic of the disease. This man complains of shortness of breath, general indisposition, and morning cough. In view of the history which we get, we look upon the lung as having undergone slow chronic change. He represents a typical example of the second species, fibroid phthisis. He has had chronic broncho-pneumonia, which has been going on for weeks, called by some physicians interstitiary pneumonia, by others cirrhosis of the lung, and by others chronic broncho-pneumonia. Syphilis will produce it, chronic catarrh will produce it, and so will the catarrh induced by breathing dust and irritating materials. Another point to be considered is that the man has been suffering from peripheral neuritis. He has been under treatment for it for some months. In such cases one gets organic nerve degenerations. Cases have been described in which the phrenic nerve was found to contain deposits of leucocytes—in other words, there were suppurating centres in the nerve-fibres. In the same way the pneumogastric nerve may undergo changes and the nutrition of the lung suffer. Therefore this patient may be an example of a mixed class of case. He may be suffering from other conditions besides catarrh, and may have trouble connected with the nerve of the lung. His sputum is crowded with tubercle bacilli. I do not think the case is primarily tubercular. Our treatment is simply to improve the general health by quinine and tonics and nourishing food. Bear in mind that chronic broncho-pneumonia is a very insidious disease without any very prominent symptoms. You will meet with it among children after measles. When after such an attack the patient is troubled by cough, carefully examine the bases of the lung. You will often find a patch of consolidation which, if uncared for, will gradually assume large proportions. The pathological condition of the case before us is excessive pigmentation, great

fibroid thickening, the whole substance of lung traversed by dilated tubes.

High Feeding in Chorea.

This young man had a recurrent attack of chorea. I have adopted here, with much advantage, the plan of high feeding. The patient has also had a mineral tonic. The fashion now is to give arsenic. Twenty years ago it was the custom to give sulphate of zinc. My own feeling is that sulphate of zinc is the better medicine of the two.

Diaphragmatic Pleurisy.

This lad was admitted a few weeks ago, suffering from intense pain and disturbances of breathing, with high temperature (103°), flushed face, and quick respirations. He had a certain amount of stabbing pain over the right side in the region of the liver. The pain was felt anteriorly, was increased by deep breathing. The right chest scarcely moved during respiration. The symptoms were evidently referable to some acute inflammatory mischief of that side of the chest, probably implicating the lower part of the pleura. I believe it to be a case of acute diaphragmatic pleurisy, a fairly rare disease. Within a few hours after admission we heard a few crepitations at the posterior aspect. A little later this portion of the chest became dull, but the whole illness rapidly passed away, and within three or four days the patient was well. It was probably due to influenza. These cases are liable to simulate other diseases. I have seen diaphragmatic pleurisy simulate acute jaundice. There may be also abdominal troubles, and such cases assume the phenomena of acute gastritis. A colleague some days ago had charge of a boy who was admitted as a case of acute peritonitis. I was asked to see him, and my diagnosis was diaphragmatic pleurisy, which turned out to be correct. There was acute pain over the abdomen and constant vomiting. I also remember seeing, some years ago, a young lad who was suddenly taken ill with acute vomiting and pain and what appeared to be acute gastritis. But it is well to remember that acute gastritis is very rare except as a result of poisoning. Therefore, whenever you see a case of acute stomach symptoms, accompanied with high temperature and rapid respirations, be

alive to the fact that these symptoms are possibly produced by diaphragmatic pleurisy. In the early stage there is often agonising pain. I saw a very instructive case a month ago. A man, aged sixty-one, consulted a surgeon with regard to some urethral trouble. He had been in the habit of passing a small amount of pus for some years. The surgeon to whom he went did not pass a catheter, but he had made an examination per rectum. I saw this patient in the evening, when he said that he felt very ill and that he had had a shivering fit. His temperature was 103·6°. I examined him carefully, but found nothing to account for illness. He complained also of a little pain in his back. I could not accurately locate it. Next morning he was rather better, his temperature was down to 101°, and there were practically no symptoms. At one o'clock the same day I received an urgent message to see him. I found him in agony, and I felt certain the case was one of renal colic, as there were sudden spasmodic pains in the left flank. He had had renal colic before. But I was puzzled by the fact that his temperature was 102° to 103°. Renal colic is not generally accompanied by high temperature. Two days later the patient had a very sore mouth, aphthous ulcers were all over the tongue and fauces, and he could hardly swallow. His temperature was still high, his pain was better, but otherwise his condition was worse. I could not detect local mischief. Adjoining the bedroom was a water-closet. My suspicions were aroused as to sewer gas being the cause of the attack. The drains were examined and found to be very faulty. On moving the patient into purer air all symptoms began at once to ameliorate. But what surprised me in this case was that it developed into a diaphragmatic pleurisy. It very closely mimicked renal colic. The patient has now recovered. He had had a large effusion and consolidation, with a good deal of broncho-pneumonia. It was, in short, one of those mixed cases which almost always suggest sewer gas as a cause. Therefore, I would say, whenever you get a case of mixed lung trouble, with irregular temperature and an irregular clinical course, be on the look-out for sewer gas as the cause. I have told you of one case of diaphragmatic pleurisy which was sent in as a liver case, another which was diagnosed as peritonitis, and a third in which

it simulated renal colic. With regard to treatment, I have found in such cases that it is very useful to give full doses of opium. The pain is sometimes so bad that the patients succumb to the agony. I am under the impression that I have seen lives saved by the speedy administration of large doses of opium at the acute stage.

Neglected Pleural Effusions.

This patient is a boy 12 years of age. He came under my care with his right chest full of fluid. There was a slight rise of temperature, which fell to normal two days after admission, and has since remained normal. What is the best treatment in such a case? Looking back on my practice of the last twenty-five years, I do not feel inclined to draw off the fluid. If there is not much fluid, especially if the fluid be on the right side, my impression is that these cases do as well with medical treatment as with tapping. Of course, if the fluid is on the left side, and it is pushing the heart out of place, tapping may be necessary. My own experience is that you get as much advantage in cases of moderate effusion by keeping the patients in bed and giving some form of iodine as by treating them with an aspirator; and you must bear in mind that often after tapping the chest soon fills up again. People who suffer from pleurisy long are apt to get a thickened and œdematous state of the pleura. A chest may remain dull on percussion long after all fluid has subsided, the dulness being caused by a thickened pleura. We had a very good example in the hospital of a man who had very much the same history as this patient. He had had pleurisy two months before admission and was sent in for operation. I could not satisfy myself that he had much fluid, but he was aspirated, and only a very small quantity of fluid could be got away. But there was almost complete loss of resonance. His condition rapidly improved, and I feel sure the symptoms were due to thickened pleura. I had a striking instance some years ago. A man was admitted under my care who had been ill for two months, and had only been in bed two or three days at the commencement of illness, with sharp pain in his side. He, however, kept at work until his legs began to swell. He was then told he was suffering from acute gout. I found that his left chest was dull and there was every

symptom of fluid. His heart was displaced, and I thought he should be aspirated, as I felt that he was suffering from pressure. We aspirated with the greatest care, but could get no fluid away. We tried four different punctures. He developed pleurisy in the right side and succumbed. This neglected pleurisy had originated a vast number of separate loculi, and there were bands of adhesion an inch thick. The needle of the aspirator had penetrated the septum instead of the loculi. His chest was honeycombed with cells containing fluid, and there were many fibrous tissue bands. It is the slighter forms of pleurisy which go on from week to week which give rise to thickened pleura. If you see a middle-aged or old man with pleurisy, be careful how you give your opinion as to the cause of it. The cause in a large number of these cases is malignant. I saw only a little time ago a patient from Australia. He left one of the Australian ports perfectly well. On board ship he was troubled with short breath. On being examined by the ship's doctor his chest was found to be full of fluid, and he had thirty-six ounces extracted. When he arrived in England he went to a medical man, who found his chest perfectly full, and I was asked to see him. He was tapped again and a certain amount of blood-stained fluid was withdrawn. Within a few days the chest filled again. The patient became weak and exhausted, the cause of pleuritis being malignant disease.

Hodgkin's Disease.

The last case I have to show you to-day is a very marked instance of Hodgkin's disease in a girl aged 12. You have just seen a typical case of leucocythæmia. The great distinction between the two diseases is that the leucocythæmic case has, as a rule, an enormous spleen, whereas in Hodgkin's disease the spleen is not unusually large, but the lymphatic glands are much enlarged. Examination of the blood in Hodgkin's disease, moreover, may show but little change. True, Hodgkin's disease never assumes the leucocythæmic character, although I am bound to say that cases of one seem to glide inseparably into cases of the other. It is an interesting fact that, within a few weeks of admission, this girl was suddenly seized with an intense febrile attack, her temperature rising as high as 106·5°; she became drowsy,

and was dangerously ill. She had pericarditis and endocarditis, coupled with what I regarded as erythema nodosum. Taking the case as a whole, I thought the patient had acute rheumatism, that form which one occasionally sees in young people, in which there is not very much joint pain. During the time she was undergoing this rheumatic attack, her glands subsided in a most marked degree, and her spleen became of normal size, and a few weeks ago one would have said there was nothing the matter with her. When she came in she had also, what one so often finds in Hodgkin's disease, a certain amount of hæmorrhage, which manifested itself in her case as a purpuric rash over the chest; during her rheumatic attack that rash disappeared. It is now some weeks since the acute seizure. She is re-developing the rash, as you see, and her glands are again getting larger. She has no mental dulness that we can detect. The prognosis is very bad, but temporary improvement can be brought about by arsenic.

The Subjective Symptoms of Empyema of the Sphenoid Antrum

are the same as those of empyema of other neighbouring cavities, though the headache is located at the back of the head, and the ocular lesions are either purely functional or affect the optic nerve at the back of the eyeball. Disease of the body of the sphenoid, whether ending in caries or not, may cause not only exophthalmos but also disturbance of vision, on account of the close proximity of the optic canal. Pain occurring in the course of disease here may show itself in a totally different part of the area of influence of the trifacial nerve, and thus lead to a faulty diagnosis. Attempts have been made to treat the interior of the sphenoid antrum through the nose; but the position of the opening into the nose is so variable, and the use of the rhinoscopic mirror is so unsatisfactory, that such attempts have usually been abandoned. Transillumination is of no practical value here in assisting us in a diagnosis. Inasmuch as the ethmoid cells are usually involved in abscess of the sphenoid antrum, if entrance through the nose proves futile it is better to open the ethmoid through the orbit, clean out the contents, and then penetrate the sphenoid antrum, and thoroughly curette its interior.—Dr. BULL, Medical Record.

A RÖNTGEN RAY DEMONSTRATION AT CHARING CROSS HOSPITAL,

June 15th, 1899,

By MACKENZIE DAVIDSON, M.B., &c.

GENTLEMEN,—I am presuming that you who have honoured me with your presence here this afternoon are not X ray workers yourselves, but probably want to know what is being done in that field of work, and in what manner it is likely to be of practical value to yourselves.

One point strikes me at once, and it was really suggested by a remark a gentleman made to me a few moments ago, that to do X ray work successfully takes so much time and such expensive apparatus that it seems likely it will drift into the hands of specialists; that is to say, a man will have to devote a great deal of his time to this class of work alone, for I do not think that the general practitioner, who is busy and whose time is broken up very much, will be able to have all the apparatus at hand to enable him to apply it himself. Probably he would be able to use it for simple cases, but not in the more difficult ones. When the X rays were first introduced, of course everybody was perfectly delighted to find that it revealed our bones, also foreign substances in our bodies, so that we could see them on the screen and preserve the view of them on a photographic plate. But after the use of the Röntgen rays became more extended, it was obvious that some method had to be adopted for finding out the position of these foreign bodies, or even, in the case of fracture, to find out the position of the fragments. What I propose to do this afternoon is to go over very shortly a method which I recommend for solving that problem, namely, by stereoscopic skiagraphy. I have brought down for your inspection some typical specimens which will enable you to see the parts in relief. The value of that method is simply immense. I will photograph a case which is waiting by this process. If you want to find out the exact position of any bullet, &c., there is no method yet devised which allows you to do less than take two separate pictures from different points of view. I have

here an apparatus consisting of a couch with an aperture covered by a piece of stout hide, which is very strong and will not allow anybody to fall through, and it has the advantage of being thin and quite transparent to the X rays. The dry-plate unprotected was used formerly, but it would often break when it was necessary for a person to lie upon it. Over this hide, measuring 12 inches by 10 inches, or 15 inches by 12 inches, there are cross-wires exactly at right angles. Above this is a scale marked off in millimetres, and the X ray tube is fastened on to this scale. Having placed the object to be photographed—the hand, limb, or body—on to the hide, the tube is first put at zero on the scale and then shifted three centimetres to one side, and the first picture is taken. Then it is shifted three centimetres to the other side of zero (the distance between our eyes being roughly six centimetres), and the second picture is taken, the limb being kept absolutely motionless while the two photographs are taken. Now, these separate pictures look very much alike indeed, as you will see from some specimens I show you; but when they are looked at stereoscopically they stand out in perfect relief. By this means you can see the exact position any foreign body occupies. (Mr. Davidson then took a skiagraph of a female patient's distorted finger, and showed it to the class through the screen.) The anode of the tube here is made of osmium, which stands the strain admirably; the osmium is fixed between two pieces of platinum. We do not use the screen much here, but rely more upon photographs. In America, however, the screen is a good deal used for inspection. I have an available current of over two horse-power. (Mr. Davidson then demonstrated the apparatus on one of his assistants, the skeleton of the thorax being clearly seen, and the movements of the liver during deep breathing.) There is no other tube that I know of which will stand such an amount of energy passed through it.

The stereoscopic pictures speak for themselves; but there are cases where more precision than that is needed, especially for foreign bodies in the eyeball, and also for renal calculi. The same apparatus does for these accurate localisations also. The cross-wires should be stained with aniline dye, and then the parts of the patient's skin where the wires touch will be marked, and

the shadow of the wires will be reproduced in the photograph. We locate the position of a piece of foreign substance in the eyeball by means of triangulation. There are diamond scratches on the glass plate which corresponds to the cross wires. Then we take our two pictures, six milli-metres apart, as before. The X rays travel in straight lines; there is no refraction, as in the case of light rays entering a denser medium; what the X rays go through they will go *straight* through. Therefore a thread can be used to re-present the path of any X ray. (Mr. Davidson proceeded to demonstrate the apparatus in detail, showing how exact localisation was effected.) When I worked out this method I found it would apply to localising bullets and needles and other substances, and tell us not only the position but also the size and the lie of the fragments. Then I applied it to the eyeball, and we can now localise the position of a foreign substance in the eyeball from one-fiftieth to one-hundredth of an inch. I show you a number of photographs of very small particles which were localised by this method. I put a wire upon the patient's eyelid and stick it on with plaster; then I notice the relation of the eyeball to the upper end of the wire when the head is fixed in the apparatus I show you, keeping the patient very still, and I ask him to look steadily in one direction at a mark placed in front of his eyes. The image of these foreign bodies is so small that an air bubble or a flaw on the plate will look like a foreign body. Here is a photograph of a piece of glass in the eyeball. This is the apparatus for taking photographs of particles in the eye. The patient's head is fas-tened into this receptacle, and a chin-piece put on to keep his head quite rigid; then two pictures are taken as before. It is of course very impor-tant to know exactly where the foreign body is located in the eye, and whether it is just inside or just outside the sclerotic. In one case it is pos-sible to save the eye, while in the other the patient would probably lose his eye. For this eye work we have the X rays proceeding from the finest point on the anode. I have here a rifle-sight which is at right angles to the photographic plate. We then look and adjust the tube until we get the bright spot from which the rays proceed in a dead line with the point where the wires cross each other. Having done that, we displace our

tube three centimetres and take one photograph, and then three centimetres the other way and take another picture. The patient is made to look at a point so placed that the visual axis is parallel to the horizontal wire. This also secures immobility. Ninety seconds exposure was allowed in each of the pictures I show you. We have had eight cases in which a foreign body in the eye has been located in an opaque lens. In three cases the foreign body was in the iris, and in those cases the eyes were saved, because the particles were extracted, and then the lens was removed. In several cases pieces of steel have been localised and taken out of the vitreous by means of an electro-magnet. I should like to mention one case particularly showing the advantages that this method has given us. In the old days, if a particle of non-magnetic metal got into the eyeball it was not attempted to remove it unless it could be seen; no one thought of fishing about for it, because during the process of fishing the eye would be so damaged as to be useless. The other day, however, a boy was hitting a revolver cartridge with a stone, and, as might have been expected, it went off, and a piece of the copper entered his eye. He was brought with a wound in the ciliary region, and the whole eyeball was filled with blood. I at once photographed it stereoscopically, measured it, and gave the exact position of a fragment of copper. I told the ophthalmic surgeon (Mr. McHardy) exactly where it was, and let him look at the pictures stereoscopically which we had taken. He knew the position, cut into the vitreous at this point, put in a pair of forceps and brought out the piece of copper (he knew from the photograph how to turn it) without a drop of the vitreous being lost. I think the X rays will prove of more benefit in ophthalmic surgery than in any other branch. For all practical applications of X rays, such as for fractures, needles and other bodies, I advocate the stereoscopic method. You require two plates, it is true, and a little more time is necessary; but the information which you thus obtain is very precise, and if you have binocular vision it is worth the trouble.

The Röntgen rays have not been so successful for medical purposes. For instance, it only shows the shadow of the heart, but not its structure. Still there has been some success in discovering

renal calculi by its means, and I have had seven cases of this kind, the seventh having come to me this morning. Of these cases the calculi have been verified in five. In one of the cases (Mr. Pearce Gould's) we located an opaque body so high up that it appeared doubtful if it were a calculus. However, Mr. Gould cut down on the spot and found a calculus in the extreme upper end of the kidney, immediately under the spot marked. The reason, I think, people have not been so successful in skiagraphing renal calculi as they might have been, and as I hope they will be in future, is, in my opinion, twofold. First of all, they have not used tubes which give such good definition as that which we use; and, secondly, they have ignored the movement which occurs during breathing. Any photograph of the abdomen is disappointing. One of the reasons is probably this, that the bowels have mixed contents and often a lot of fluid, which is very opaque. During the natural peristaltic · movements of the bowels, and during breathing, the outline of the photograph is blurred. This is not the case in photographing the abdomen in a dead body, and that is because the contents of the abdomen are absolutely still. Therefore, as the kidney is pushed down at least about half an inch at each inspiration, it occurred to me that we might get a good result if we regulated the breathing. This is a very simple method and it works out well. While the patient lies on the couch, with the lumbar region over the hide in the apparatus, I put this arrangement on some part of the chest, and when the patient takes a deep breath the point of the index is raised, and when he expires the index comes down. I get the patient to practise several times, holding his breath and stopping his breathing at a certain period. When I am ready to photograph I ask the patient at a certain point to stop breathing, and then at once expose for twenty seconds or so, then he resumes breathing, and I take another exposure, and so on until the necessary time has been reached; say, one to three minutes, the current being turned off until the abdominal wall is at the same level each time. In one case we located calculi; a well-known surgeon cut down upon the kidney and felt about, but did not succeed in finding a calculus. We took another photograph and again located it; the kidney was again cut down upon,

and this time it was found and removed. I show you a photograph, with calculi very clearly defined, in which we first used this plan for regulating the breathing. The bladder is not generally difficult to take, especially if you make the patient lie flat on his abdomen; for then the calculus will fall close to the anterior wall of the bladder, and there is no bone for the rays to go through.

Treatment of Chronic Gastritis. — W. C.

Bilbro remarks that each case should be especially individualised and studied and traced, as there are no two alike and no two require the same diet or medicine. There is absolutely no routine treatment successful. The successful treatment of chronic gastritis depends very much on the patient's resolution and perseverance in carrying out the instructions he receives. Mental influences are very important in the treatment. Arsenic in small doses long continued is one of the most potent drugs in any mucoid inflammation of the stomach and bowels. Nux vomica is indicated, and should be given in doses of not less than 20 drops of the tincture, or from 1-20 to 1-16 grain of strychnine. Hydrochloric acid is almost always admissible and useful. Lavage is an important factor in the treatment. The object is to thoroughly clean the stomach, and nothing is better than papoid and water, the patient not being allowed to take nourishment for thirty minutes or an hour after washing. Diet must be strictly regulated; all irritating or indigestible food must be strictly prohibited, and only that which is most easily digested and assimilated allowed. Milk does not agree with every person, especially sweet milk; but when it can be taken alone or diluted with one fourth lime-water, given in small quantities and at frequent intervals in extreme cases, it will be found very valuable. Tea and coffee, as a rule, should be avoided; alcoholic stimulants should not be allowed unless in cases of habitual drinkers, then a little good whisky in Vichy water is possibly admissible. Regularity in the times of administration and in the quantity of nourishment given is most essential.—*Monthly Cyclopædia.*

THE CLINICAL ASPECTS OF GENERAL PARALYSIS.*

By CHRISTOPHER BRAINE HARTNELL, M.R.C.S., L.R.C.P., Cheltenham.

MR. PRESIDENT AND GENTLEMEN,—I venture to bring the subject of general paralysis before your notice this evening on account of its great interest. Firstly, because of the widely different varieties one may see of this disease, and secondly, owing to the vast number of symptoms clinically interesting and important which arise from time to time.

General paralysis was first recognised and described by Willis in 1672, and later by Bayle and Calmeil. In our own time, and in our own country, Mickle has done more than any other observer to bring this disease more prominently before the profession. It is a common fallacy to suppose that general paralysis is present only in an expansive and maniacal form, and to pass over unrecognised those forms which are associated with melancholia or hypochondriasis.

According to Mickle there are five forms:

    Expansive,
    Maniacal,
    Melancholic,
    Hypochondriacal,
    Cases of circular insanity.

To these Clouston would add a form free from delusions, presenting only motor symptoms with increasing dementia. The writer certified a woman only the other day with the following symptoms:

(*a*) Marked irregularity of the pupils.
(*b*) Tremor of the lips and tongue.
(*c*) Clumsy shuffling speech.
(*d*) Restlessness and exposure of the person.
(*e*) Dementia.

There were no delusions.

In the expansive and maniacal forms the general paralytic is often exceedingly pleased with himself and his surroundings. He feels no sorrow, knows no anxiety, but is cheerful, even boisterous—in fact, a " good fellow." He is emo-

* A Paper read before the Gloucestershire Branch of the British Medical Association.

tional, will burst into tears, or shout with laughter upon the slightest provocation, and with equal facility. His egotistical and optimistic views of his own wealth, position, or strength will land him in the very highest heaven of bliss for a short time, only to be hurled into the deepest abyss of despair a few minutes later, when, with tears in his eyes, he begs for his discharge from the "madhouse," as he is not mad, and yet his stammering tongue, his trembling lips, and his unequal pupils have set the fatal seal of general paralysis upon him. At times there may be violent outbursts of mania, and for hours he may amuse himself by shouting or singing snatches of old songs. He will refuse his food, and defile himself and the walls of his room with excrement. The course of the disease is from bad to worse, with occasional remarkable remissions. During a remission the improvement may be so startling that one is apt to wonder whether after all the case is one of general paralysis. The improvement is but temporary, however, and the downward progress is marked by increasing dementia and motor paralysis, and finally our quondam hail-well-met fellow has developed into a fatuous, bed-ridden, general paralytic.

The melancholic form presents a striking contrast to the above picture. Instead of our buoyant egotist, overweening in his self-confidence and self-assurance, we have to deal with a timid, dolorous individual. It is true his ideas may be self-centred, but he will not dwell so much upon his wealth and greatness as upon his persecutions, ills, and suspicions. He is being poisoned, he is under constant supervision, or electric batteries are working on him day and night. These cases require constant supervision as they are suicidally inclined.

Hypochondriasis may be associated with general paralysis. Many writers agree that the hypochondriacal delirium and the expansive delirium are often met with in the same patient, the individual passing from one stage to another with the greatest rapidity. The general delusions in this form seem to be that the viscera are being gnawed away, or that the generative organs are useless. Micromania may sometimes be noticed, as in a patient of Hammond's, who fancied her mouth was so small that a spoon could not be introduced.

Mickle records cases of necromimesis, in which state patients fancied that they were dead, and would lie for hours like corpses, and, if aroused, would be very indignant at being told that they were not dead.

The individual symptoms may be divided into mental and motor.

1. *Mental.*—In the prodromal stage perversion of the moral sense is generally noticed. Ridiculous larceny and obscenity, in fact, loss of moral tone, great anxiety over things of small moment, loss of memory, mental confusion, or dulness of the intellect, may all be noted as early symptoms. Occasionally an acute outburst of mania may be the first signal, a congestive seizure, or epileptic fits. According to Greisinger, however, epileptic fits are never seen until late in the disease. The delusions are varied, often only of temporary duration, and far exceeding the bounds of reason or possibility. It is important to note with what ease one delusion is given up for another. The transitory nature of these delusions is a marked feature of general paralysis. Hallucinations are noticed, according to Mickle, as follows:—Visual occur in 74½ per cent. of all cases; auditory in 73 per cent.; tactile or gustatory in 22 per cent.; olfactory in 20 per cent.

Mental symptoms generally precede the motor, sometimes they are concomitant, and rarely the motor precede the mental.

2. *Motor.*—Tremor of the lips and tongue is very characteristic of general paralysis. The lips especially tremble during excitement. The tremor may be a fibrillary movement, or coarser and more marked. The tongue is often protruded in a spasmodic, jerky manner. A general tremor is occasionally present. Localised paralyses are generally met with. Articulation is defective, the labials especially giving rise to trouble. Deglutition is at times difficult, and in late stages dangerous, as food is apt to be drawn into the larynx. The gait may be ataxic or spastic, and in late stages paretic. There is inability to perform movements that require co-ordination. As regards reflexes, the superficial are usually lost, the deep may be lost or exaggerated. In 44 cases recorded by Bevan Lewis, 36 per cent. were exaggerated, 15 per cent. lost, and 13 per cent. normal.

Sensory symptoms.—Hyperæsthesia may be an

early symptom, and localised anæsthesia of a temporary nature is common, so much so that injuries may not be felt. Neuralgic pains are not uncommon, especially girdle pains. Perforating ulcers may be seen.

Vaso-motor symptoms.—In early cases flushing of the face is common. Later in the disease the vaso-motor changes are very important. Bedsores, acute or chronic, are rarely absent in late stages. After a convulsive seizure, it is not uncommon to find an acute bed-sore over the sacrum.

Othæmatoma may arise during the late stages; it is generally unilateral, occasionally symmetrical, Hæmatomata have also been found in the cartilage of the ribs or nose. Extravasations of blood may take place around the ankles, knees, and elbows, or in the popliteal spaces. Hæmorrhage from the mucous surfaces of the bladder, stomach, uterus, or bowel are found in rare cases. It is common to find boils, carbuncles, and blebs, and more rarely, gangrenous spots in the skin. Trophic or Charcot's joints should be mentioned. The bones in general paralytics frequently and easily fracture, owing to the diminution of the calcium salts. These fractures may easily be overlooked, as the patients may feel no pain, and so make no complaint.

Special senses—The eye.—A tendency to dilatation of the pupil has been mentioned by Bevan Lewis as a valuable early sign. The pupils are so frequently unequal that this has become a characteristic sign of general paralysis. Ptosis may be present. In a good number of cases there is colour blindness, with inability to distinguish red from green. A patient of the writer's had to leave the merchant service, in which he was a captain, because he became colour blind, and could not distinguish the lights.

Much has been written upon the condition of the optic nerve. Gowers considers the discs normal in the majority of cases. Wigglesworth and Bickerton, who published a paper upon the subject some time ago, found, in 66 cases, the discs normal in 65 per cent., and abnormal in 22 per cent. In three of the abnormal cases the abnormality was due to some other cause, and in eight it was very slight. In early stages, hyperæmia may be seen, but not sufficient to be called a definite neuritis.

The nose.—Voisin lays great stress upon loss of smell as an early sign, as, with very rare exceptions, it is found in no other forms of insanity. The test is difficult to carry out sufficiently well to be of service from a diagnostic point of view. When dementia is present, answers as to the sense of smell are quite inaccurate. In an early stage, in the absence of any other somatic signs, it would be a bold man who would diagnose general paralysis on such a slender basis, and, indeed, few men would think of applying the test. The sense of smell, if lost, may return during a remission.

The larynx.—The voice is apt to become hoarse and reedy. A former patient of mine, as a young man, had a fine baritone voice. He developed typical general paralysis, and would amuse himself for hours by singing his old songs, very much out of tune, and with a markedly reedy voice. Owing to anæsthesia of the glottis, food may find its way into the larynx.

Deafness is present in some cases.

Genito-urinary system.—Retention of urine is sometimes a very early sign. It has been said that if the distended bladder be left to itself it is more than usually apt to rupture, as the bladder walls seem to undergo fatty degeneration. Cystitis is common. In later stages all control is lost over the bladder and rectum. In some early cases there may be great and uncontrolled sexual desire, probably a symptom and not a cause of general paralysis. In later stages this is lost. The urine presents nothing abnormal.

The electrical reactions show lessened irritability in quiet states, and increased irritability during the periods of excitement.

Symptoms of ulcerative colitis are seen in a few cases before death, and verified by *post-mortem* examinations.

An examination of the blood shows diminution of the hæmoglobin in 52 to 75 per cent., and an increase in leucocytes.

The remissions occurring in general paralysis are very interesting, and, at times, exceedingly puzzling. During a remission, which may occur in any stage, more especially after an injury or acute illness, all active symptoms seem to disappear, and the patient for a time improves. This improvement may be so marked as to lead one to question the accuracy of the original diag-

nosis. The duration of a remission may be weeks, months, or even years. The handwriting is bad, words are frequently left out, capitals are used in the wrong place, and the spelling may be phonographical.

The temperature is sometimes elevated at night in late stages, and this may probably be due to septic absorption. The temperature frequently rises after a convulsive seizure.

The prognosis is most unfavourable. The average duration is about eighteen months, though some cases may last for five to ten or fifteen years. In rare cases recovery is said to take place.

The diagnosis.—General paralysis should always be kept in mind when dealing with cases of insanity occurring for the first time in males between the ages of thirty and fifty.

Alcoholic insanity may easily be confounded with general paralysis. The special points of difference are that in the alcoholic form the areas of anæsthesia and the hallucinations are more marked, as are delusions of poisoning and marital infidelity. Tremblings also are universal, and not local, as in general paralysis. Exalted ideas may be present, but they are not characteristic of general paralysis. In syphilitic diseases of the brain the mental symptoms are frequently preceded by the somatic, such as ocular palsy, local anæsthesia, and nocturnal headache. Syphilitic patients are generally anæmic, a most unusual condition for general paralytics. Syphilis generally occurs before the age of twenty-five, but general paralysis is rare at this age.

In general paralysis local paralyses follow convulsions, are incomplete, transitory, and recur; in syphilis convulsions follow paralysis, which is complete and lasting. In syphilis the delusions are less persistent and less absurd than in general paralysis.

To distinguish general paralysis from cases of *acute mania,* notice the absence of twitching lips, unequal pupils, and hesitating speech. In general paralysis it is not uncommon to get a history of previous attacks of unconsciousness. It is important to note that tremor of the lips and face, though suggestive of general paralysis, may be the result purely of emotion in nervous subjects.

In cases of *cerebral tumour* we have the

classical symptoms of headache, vomiting, and optic neuritis to guide us.

From cases of *disseminated sclerosis* the diagnosis is sometimes extremely difficult. In both we may meet with increased reflexes, tremulous lips and tongue, with delusions, and increasing dementia. In disseminated sclerosis we may find nystagmus, and intention tremor with scanning speech, in contradistinction to the unequal pupils of general paralysis.

General paralysis is rare in old age, and this is one of the distinguishing points between it and *senile dementia.* The dementia of old age is often well marked before any somatic signs appear.

In cases of *secondary dementia,* from any cause, the long duration and sameness of the symptoms would point to dementia.

It should not be forgotten that chronic *lead poisoning* may closely simulate general paralysis.

Causes.—Perhaps syphilis plays a stronger part in the production of general paralysis than any other known cause. Mott would go so far as to say that syphilis is present in every case.

Spillmann and Dengler gave syphilis as a cause in no less than 63 per cent. of all cases, nervous heredity in 20 per cent., and alcohol in 17 per cent.

Regis considers that 65 per cent. of the cases are due to syphilis, but, taking all the other forms of insanity together, it only acts as a cause in 10 per cent. of the cases. The same observer found a specific family history in 7 out of 14 cases of juvenile general paralysis.

As far as we know at present, general paralysis does not absolutely require syphilis for its origin, and it certainly does not improve under antisyphilitic remedies.

Alcoholic intemperance acts as a cause of general paralysis in about 21 per cent. of the cases.

According to the Lunacy Book, there is hereditary disposition in 15 per cent. of all cases, though Bayle considered that 50 per cent. of the patients showed a family history of insanity All are agreed that males are affected about four times more frequently than females.

G. R. Wilson, in an able paper to the 'Journal of Mental Science,' in 1892, strongly advocates the theory that general paralytics are "born, not made," and that from birth they inherit a predis-

position to this form of insanity. Cases occurring in early life, that is under twenty years of age, and those seen in the same family, perhaps, give some plausibility to this theory.

St. John Bullen points out that the form of general paralysis is gradually altering, and that the melancholic type is taking the place of the maniacal.

It is interesting to note that degeneration of the lateral column of the spinal cord is generally present in the melancholic cases, and degeneration of the posterior columns in the maniacal forms. According to Stewart, in the spastic type of general paralysis the brain only weighs on an average 42·7 ounces, whilst in the tabetic form its weight is 46 ounces.

As regards treatment, we know of no drugs that can to any extent influence the course of general paralysis. Lumbar puncture has been recommended as giving temporary relief, and even tapping the lateral ventricles, but at present the course of the disease is almost beyond control. During the stages of excitement digitalis and opium may be of service. Perhaps, in years to come, we may find some anti-paralytic serum, and then the treatment of nervous diseases will progress. It is improbable, truly, but the improbabilities of to-day become the certainties of to-morrow.

Gangrene following the Application of Orthoform Salve. — Miodowski ('Münchener Medicinische Wochenschrift,' No. 12, 1899) reports a case of sloughing following the application of 5 per cent. orthoform salve. A woman, sixty-eight years old, suffering from an old varicose ulcer of the leg, having been treated by a zinc preparation, complained of violent pain radiating to the knee, and so severe as to interfere with sleep. A 5 per cent. orthoform salve was applied to the ulcer, with the result of almost immediately relieving the pain. The patient was able to sleep comfortably. Upon inspecting the wound about a week later, a large slough was found in the position of the ulcer; the latter had extended. In this case (as far as the report of it goes) it is not fair to conclude that the gangrene was due to the orthoform salve. It is noteworthy, however, that the application relieved the severe pain of the inflamed ulcer.—*Therapeutic Gazette.*

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XXIII.

GENTLEMEN,—I now proceed to consider narcotic poisons. The first and most important of these is morphia, and when I say morphia of course I include everything which contains morphia— opium and the various preparations of opium. I need not give you a list of all the preparations in the pharmacopœia which contains opium, I must assume that you are familiar with them. As you are aware, opium contains a large number of alkaloids, and some of these alkaloids are more narcotic than others. If you look at a tabular statement of the various alkaloids contained in opium, you will find that while some of them produce narcotic symptoms, others produce convulsive symptoms and so forth, and if you look at the lists given by various authors you will see that they do not agree with each other. In short, while we agree about the chief alkaloid of opium, our knowledge is not so certain with regard to the others which are less commonly used. Now when the alkaloid morphia is given, the symptoms produced are tolerably uniform, but when opium is given you have to remember that the quality of opium differs very much, that some preparations contain a greater quantity of morphia than others. When opium is given the first symptom is one of very transient mental excitement, but that is usually very transient indeed, and in a very short time the patient sinks into what is apparently an ordinary sleep. If the dose of morphia or opium be large enough, the sleep deepens until it becomes exceedingly heavy. A person fully under the influence of morphia is deeply asleep; there is probably stertorous breathing, the pupils are contracted to pins' points, the skin is cold and clammy and very likely bedewed with sweat, the pulse varies somewhat, but is usually rather slow and laboured, and the respiration tends to get slower and slower. What I want particularly to insist upon is that morphia seems to kill by poisoning the respiratory centre, and that, of course, is an important fact. The urine is generally suppressed, and of course there is no action of the bowels. A patient fully under the influence

of morphia is absolutely insensible; any pinch or painful impressions may be made upon him without his taking any notice. The muscular relaxation in cases of deep narcotism is singularly great. I mention that because I have heard it questioned as to whether morphia is an anæsthetic. Of course the question would not be asked by anybody who knew anything about it. A patient fully under morphia cannot be roused by anything. I have said that the breathing is stertorous. What do we mean by that? We mean the snoring noise which sometimes accompanies every inspiration and sometimes every expiration. And I should say in speaking of stertor that you have to distinguish between two kinds of stertor, palatal stertor and laryngeal stertor. Palatal stertor is due to complete relaxation of the palate, the palate hangs like a relaxed vibratile curtain, and the air going past it, generally on both sides of it, through the nose and through the mouth, causes the typical loud snoring. And we know very well that people are apt to get that loud vibratile stertor when they are in a deep sleep with their mouths open. Why do we get palatal stertor in cases of narcosis? The only explanation one can offer is that the muscles of the palate are completely relaxed, and therefore it lends itself to vibration very readily. In cases of deep apoplexy, uræmic coma, and coma from morphia, we get this palatal stertor. There is another kind of stertor to which I shall have to allude, namely, laryngeal stertor. That is a different thing altogether. It is the noise we get in whooping cough and in laryngismus stridulus, and in cases of paralysis of the abductors of the vocal cords. There are some occasional symptoms in morphia poisoning, and one of those is itching of the skin. Occasionally also we get exanthemata. Exanthemata are common in many conditions, and are apt to occur when anything strange or indigestible is put into the alimentary tract. These exanthemata are common after enemata. They are very common after eating pork or crab, or things of that kind, and they generally mean that there has been an indigestible meal. So after morphia we get sometimes an exanthem and itching of the skin. Then occasionally in children there have been convulsions. Occasionally in males there has been priapism, occasionally vomiting, and sometimes slight albuminuria. Now, you may be called to

a case of morphia poisoning, and the patient may recover consciousness and speak and so forth. I want to warn you, with regard to those cases of deep narcosis where recovery takes place, not to go away and leave the patient directly, nor to tell the friends that the patient is safe now, because that is not always the case. In these cases of deep narcosis from morphia, and sometimes from various forms of suffocation, from inhaling carbon monoxide for instance, the patient is liable to relapse, and it is very important to note that. You may think the patient is all right, and then a relapse may take place, followed by death. One notable case occurred some years ago which excited a great deal of attention, because the lady was living in fashionable circles. She accidentally took a large dose of morphia, and she recovered sufficiently to talk to her daughters, and then when the doctor left her she had a relapse and ultimately died. Of course morphia may be given not only by the mouth but hypodermically, and whenever you find a person narcotised, and you can get no history of his or her having taken anything in the way of food or drink, you should carefully examine the body for hypodermic punctures. I think that is a very important matter.

Now, as to the diagnosis of opium poisoning. Opium poisoning resembles two things. It resembles a case of pontine hæmorrhage. If hæmorrhage occurs in the pons you may get general muscular relaxation, and you may get pin-point pupils. But in a case of pontine hæmorrhage you would generally get some evidence of definite paralysis, very likely some paralysis of one side of the face. Again, you may get the smell of opium if the poison has been taken in the form of opium. Symptoms resembling those of opium poisoning occasionally supervene in people who are the victims of disease of the lower urinary tract. In some of these cases where there has been an old stricture, and suppuration extending up the ureter and the pelvis of the kidney, you may get the patient asleep with pin-point pupils, and your first impression is that there has been opium administered. I remember seeing such a case a year or so ago in which the patient's condition was almost precisely like that of a person dying from morphia poisoning, but there was no evidence whatever of morphia poisoning, and there was evidence that he had had a stricture for a very

long time and that he had passed pus in his urine. It was found post-mortem to be one of those cases of narcotism subsequent to disease of the lower urinary tract spreading upwards and involving the kidney; in fact, it was a form of uræmia.

Now, as to the post-mortem signs of morphia poisoning. We get intense congestion of the venous system, because the respiration is exceedingly slow and the patients die asphyxiated. In these cases the bladder is generally distended with urine, and you should draw off the urine with a catheter, if you are in doubt, and have it submitted to an expert chemist to see if morphia can be detected in it.

What is the dose of opium which is fatal? Well, that is exceedingly difficult to say. It depends so very much first of all upon the age of the patient. And I would remind you that little children are exceedingly sensitive to the action of opium, and that it is not safe to give them opium in any form, in doses however small. One or two drops of the tincture of opium seem to have been sufficient to definitely kill children. On the other hand, of course, an opium eater seems immune to the effects of opium. And the man who habituates himself to the use of the hypodermic syringe is practically immune; the amount of opium such persons take seems to be only limited by the amount of money they happen to have in their pocket to buy it with. One very curious thing about the person who is a victim of the opium craze, is that the effects seem to be very generally reversed. The victim of the craze cannot do his work until he has had his dose. I have heard it said to me very often that a clerk cannot add up a row of figures, that is to say, he has not the use of his faculties, until he has had his dose; it is the old tale, they cannot get on without the morning dram. That is a form of homœopathy which is as old as the hills—the hair of the dog that bit you.

Next as to treatment. The treatment of opium poisoning, if the drug be taken into the stomach, is to empty the stomach instantly, and in addition to wash it out. A great addition to our means of counteracting the effects of opium seems to be found in permanganate of potash. By putting that into the stomach the alkaloid seems to be oxydised or changed, and seems to lose a good

part of its lethal properties. There is no doubt that is a method of treatment which may be followed. Then it is a good plan to keep the patient awake, and to do that you may douche him, walk him about, flip him with towels, and so forth. But let me give you one word of caution: take care that in treating a patient who is the victim of opium poisoning, not to practise what, if he were in a sensitive condition, would be termed cruelties. *In your own interests* it is not advisable to leave marks. You might get accused of brutality through this awkward circumstance, notwithstanding that it may have been done with the very best intentions and with the idea of saving your patient from the brutality of death. You must be cautious and sensible. Tea and coffee are important, they are stimulants; the administration of a large quantity of coffee is undoubtedly a very valuable thing. The next point is with regard to atropine. Atropine and morphia are said to be antagonistic to each other, and they are so, but only to a certain extent. The evidence as to the curability of opium poisoning by atropine is not of the best. A large number of cases of morphia poisoning do recover, and you are always confronted with the *post hoc* fallacy, which confronts us whenever we try to come to conclusions about therapeutic measures. I would, however, warn you not to give lethal doses of atropine. The ordinary dose of atropine is 1-100 grain, and you will do well to give the drug in only strictly therapeutic doses; of course you may repeat the doses at intervals, but do not give a big quantity at once. Because a person has taken poison, that is no reason why you should give him a lethal dose of something else, for by so doing you might put yourself in a false and very uncomfortable position. What is the antagonism of morphia and atropine? Of course the antagonism on the pupil is marked, that is to say, whereas opium contracts the pupil, atropine dilates it. But here is a difference, opium or morphia applied locally to the eye does not contract the pupil, whereas atropine applied locally to the eye dilates the pupil. Whereas atropine appears to act upon the muscular fibres of the iris, opium does not apparently act in that way, but acts upon the central end of some of the fibres of the third nerve. Again, atropine causes a dry skin, whereas morphia causes a damp, clammy skin. Atropine causes a

very rapid action of the heart, an uncontrolled action of the heart; the action of opium on the heart is less uniform, but very often gives a slow, laboured pulse. Most observers seem agreed that if given in large doses both atropine and morphia may weaken the action of the heart, and you must remember that, as a rule, the heart that hurries is feeble.

Now a word or two as to chronic poisoning by opium. I do not think I need detain you very long with that. There are many narcotics which are cerebral excitants in the early stages of their administration. That is, cerebral excitation is one of their first symptoms. And so it is with opium. Opium causes a condition which is *sui generis*, and I rather fancy that the opium state of mind is different from the state which is produced by some other narcotics. We shall have to consider eventually the action of alcohol on the brain, and I think it is worth while to draw your attention to the action of morphia on the brain. Now, we have an account of morphia-taking by De Quincey. De Quincey got into the opium habit, and it is said that he took as much as 333 grains of opium a day. He describes his condition. I would remind you that people differ immensely in their power of taking morphia. Some people get nothing but good out of it, nothing but satisfaction, relief from pain, and so forth (of course I am speaking of medicinal doses). Others it does not affect in the same way. Personally I confess I would rather endure any reasonable amount of pain than take any morphia. My personal experiences of taking small doses for a cold have been so exceedingly disagreeable that I, as I say, would undergo any reasonable amount of pain rather than take it. You must excuse my giving personal experience, because when one speaks of the effects of things on the brain one has only one's own brain to go upon. So small a dose as is said to be got in a Manilla cigar may cause nightmare of the most disagreeable kind. It is certain that many do not get a true sleep from opium. We have always got to consider whether the condition of narcosis is the same thing as refreshing sleep. I may say personally, and other people have told me the same thing, that after they have had a dose of morphia at night they feel "all to bits" in the morning, and not refreshed. Now, the dreamy state produced by morphia is

very curious, and has always something of what one may call the supernatural; the nightmares and dreams produced in this way are, so to say, the inventions of an uncontrolled cerebral cortex. De Quincey, who was a very good judge of both, asserts that the mental state caused by opium is different from that caused by alcohol; it is more stable, more chronic, it stimulates the imagination, gives equipoise to the mind, breeds contempt for misfortune and the world. An opium eater in the early stage is never maudlin, never aggressive; he is an active nuisance to no one but himself. That is a very important and curious thing. The drunkard is a nuisance to everybody, including himself. If you read De Quincey's account of the opium state, you will recognise that the delirium caused by opium is quite different from that caused by alcohol. Again, Samuel Taylor Coleridge's poem of Kublai Khan was said to be composed while under the effects of opium. It seems that under its influence supernatural, weird sort of fancies come up. *In vino veritas* is a trite saying, but you cannot say *in morphina veritas*, for the dreamy state of a morphia eater seems to transcend all ordinary experiences.

Now the alkaloids are so-called because of their basic qualities; they all have the power of combining with acids and forming salts, and I need not remind you that the salts of morphia are numerous—the sulphate, hydrochlorate, and so forth. Now, of all the alkaloids with which we are concerned, morphia is one of the most difficult to detect; the detection of small quantities of morphia in organic liquids is a very difficult problem indeed. But at the University of London they recognise that fact, and they do not give the ordinary student morphia in organic liquids. I have here pure morphia. You will notice that it is a crystalline body, white in colour, without odour of any kind. When you get a white powder like that, you should, as we have so often done, put it upon platinum foil and heat it over a lamp. You see it melts into a dark oily liquid, then inflames and burns with an exceedingly sooty flame, leaving the platinum foil coated with carbon. That residue of course tells me at once that I have an organic body to deal with and not a mineral salt. Its behaviour would raise a strong suspicion in my mind that it was an alka-

loid. I will now put some of this alkaloid into a test-tube, and, after adding a little distilled water to it, I will boil it. Solution is by no means rapid; the pure alkaloid is not readily soluble in water, but this and many others of the alkaloids are readily soluble in dilute acid. I add a little hydrochloric acid, and you see that solution takes place instantly. When you get an alkaloid dissolved in that way you may often get them reprecipitated on the addition of caustic potash. One great difficulty in dealing with morphia is that, having added your caustic potash to reprecipitate your alkaloid, directly you add an excess of caustic potash the alkaloid is redissolved. Morphia is readily soluble both in acids and in alkalies, which fact makes its detection so exceedingly difficult, especially in organic mixtures. But I will now show you a test for it—a colour test. Take the alkaloid and add to it a drop of nitric acid; that gives a red coloration. In the same way perchloride of iron gives a green coloration. It is the red produced by nitric acid and the green produced by perchloride of iron, which tells you that you are dealing with morphia. Now, I will put some morphia into the test-tube and add a little hydrochloric acid, and heat it over the lamp. I have here a pure watery solution, without smell. I evaporate a drop of it to dryness on platinum foil. You see that it dries up, and inflames when it is dry, leaving a carbonaceous residue; so I know I have organic matter there. We now go right through with the ordinary reagents—hydrochloric acid, sulphuretted hydrogen, ammonium sulphide, carbonate of ammonia, and so forth, and we get no precipitate. Then the question arises, what have we got? There are certain tests for alkaloids. I put a little of the solution into the three test tubes. I have here Myer's solution, which consists of 6 grains perchloride of mercury, 22 grains iodide of potassium, and one ounce of water. Now I take Myer's solution and I get a white gelatinous precipate. That shows me that I have got an alkaloid to deal with. The question then arises, which alkaloid? A very good fluid test for morphia is to mix some solution of iodic acid with chloroform, equal parts, and add morphia to them. You see I immediately get a change of colour, a very ruddy yellow; iodine is liberated by the morphia, and it is redissolved gradually by the chloroform, which sinks to the

bottom, giving you a pink globule. That is a very delicate test for any substance containing morphia. You may get it with opium or any organic liquid. You may use iodic acid with bisulphide of carbon, and that is rather a better thing to use than chloroform, but it is not so pleasant, as it smells badly. Then you may apply to your solution a colour test again. Here, the solution being very dilute, I do not get the intense coloration with nitric acid, but a diluted yellow one. I heat a little in a white evaporating dish over a lamp, and by condensing it I get the orange coloration.

Novel Method for Removing Tapeworm.—

J. W. Kline, in the 'Iowa Medical Journal' for April, 1899, describes a novel method of dealing with a tapeworm. In the removal of these parasites it not infrequently happens that several feet of the worm is passed and protrudes from the anus, while the upper portion of the worm with the head remains in the intestine. As the tapeworm has a pair of longitudinal vessels extending from the head throughout its length along the two sides, it occurred to him that in these cases of partial expulsion, and which almost always result in failure, the worm could be very conveniently killed. He accordingly administered to the worm a hypodermic injection of morphine of one half grain, followed in a few minutes by a copious injection of water; the remainder of the worm was passed with the upper portion dead. Before administering the morphine, he had severed the lower twelve feet of the worm with scissors. This portion remained in motion for an hour after the upper part, which had been treated with the morphine, was passed, while the upper segment had no motion after its expulsion from the intestine, showing that the morphine had killed it. The author believes that an injection of the worm is one of the most efficient means of dealing with them; in partially expelled worms, where the connection between the extruded part and the head is still intact, the entire worm is easily killed by this method.—*Medicine.*

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NOTICE.

ON
INTUSSUSCEPTION ESPECIALLY IN REGARD TO TREATMENT.*

BY

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THE lecturer said he did not intend dealing with the subject in text-book style, but would give his own views and experience of cases which had occurred at the London and Evelina Hospitals.

Intussusception may be defined as the displacement of one portion of the intestine into another. It is nearly always descending, the ascending variety being very rare (for an example see Case 2).

Intussusceptions are not infrequently produced immediately before or after death, and these can be recognised by being usually multiple, as a rule ascending, and by the complete absence of inflammatory signs.

Intussusceptions are usually classified into the following groups:

1. Enteric—30 per cent of total cases. The duodenum is said in one case to have been involved.

2. Ileo-cæcal—44 per cent. This form can be recognised, when protruding at the anus, by the apex of the intussusception presenting two apertures, viz. the ileo-cæcal valve and the mouth of the appendix.

3. Ileo-colic—8 per cent.

4. Colic and rectal—18 per cent.

To these four varieties Mr. Eve in 1897† added a fifth, viz.:

5. Cæcal—Of this he has met with four examples. They occurred in children aged 3, 4, 5, and 7 months respectively. In

* Abstract of clinical lecture from notes by Mr. L. Gordon Wilson, M.B.

† Described at a post-graduate lecture, Evelina Hospital, 1897.

all laparotomy was performed, and two recovered.

The cæcal variety begins with an invagination of the caput cæci, or inferior *cul-de-sac*, which advances upwards into the ascending colon. The caput cæci carries with it the ileo-cæcal valve and small intestine. At the operation the caput cæci is the last portion of the gut to be reduced, and is usually much indurated and thickened. In one case so marked was this thickening,.and so great its tendency to reassume its invaginated condition, that sutures across the cæcum had to be employed in order to maintain the convex outline of the caput cæci. This was one of the successful cases.

The symptoms of cæcal intussusception differ in no way from those of the other acute varieties.

Causes.—Nothnagel's experiments have proved that intussusception can be produced by irregular peristalsis or by paralysis of a segment of the gut.

Clinically, irregular peristalsis is probably the cause of those cases which follow the ingestion of indigestible food, gastro-enteritis, colic, and diarrhœa. As examples due probably to paralysis of the bowel the following interesting cases may be cited:

CASE 1.—A female child aged one year and eight months was admitted to the Evelina Hospital with symptoms of intussusception, and was operated upon about twelve hours after the onset of symptoms. There was an ileo-colic intussusception occupying a transverse position just above the umbilicus. On reduction the apex of the intussusceptum was seen to be formed of a plate-like induration of half the circumference of the ileum, situated just above the ileo-cæcal valve. The plate was bent on itself towards the lumen of the gut, and its convexity or angle evidently formed the apex of the advancing layer. Doubtless this plate corresponded with the base of an ulcer, possibly tuberculous. The child made a good recovery, so that no opportunity for further investigation was obtained.

CASE 2.—A boy aged two and a half years was admitted to the Evelina Hospital with symptoms of intussusception. About twelve hours after the onset of symptoms Mr. Eve opened the abdomen and found an ileo-cæcal intussusception about nine inches in length. It was reduced with some difficulty, owing to the shortness of the

mesentery. As far as could be judged the last portion went back with a distinct slip. Pain, vomiting, and the passage of blood returned the next day, when Mr. Eve again opened the abdomen, and found a small ileo-colic intussusception, which was easily reduced. Occupying the ileum above it were three ascending intussusceptions. The patient died the following day. Post-mortem it was found that the intussusceptions had not recurred, and there was no peritonitis. Further examination showed that the apex of the intussusception had been formed by a large tuberculous ulcer.

In another case, not under Mr. Eve's care, the apex was formed by a typhoid ulcer.

It may be assumed that in these cases the interference with peristaltic action or paresis in the segment of bowel. affected by the ulcer was the chief cause of the displacement. The tumefaction of the mucous membrane would doubtless be contributory.

Intussusception has been met with in connection with other diseases of the bowel, *e.g.* cholera, polypi, and tumours. A case of the latter nature was operated upon by Mr. McCarthy, whom Mr. Eve assisted. The patient was an elderly person who had been admitted with intestinal obstruction. At the operation, an intussusception was found in the sigmoid flexure, the apex of the entering layer being formed by a carcinomatous growth. (A specimen was shown in which intussusception had been started by the inversion of a Meckel's diverticulum. The intussusception was ileo-colic, and the symptoms were chronic. See Case 3.)

Age.—The extremes of age occurring at the London Hospital during the past ten years were two days and seventy-three years. Fifty-three per cent. of the cases occurred in children under the age of eleven years (Treves).

Symptoms.—These are divided into *acute* if the case terminates within seven days; and *chronic*, if lasting a longer period. The onset is sudden, with colicky *pain*, often paroxysmal and referred to the umbilicus. In children *vomiting* is usually a marked and early symptom, frequently commencing at once. The next sign to appear is the passage of *blood-stained mucus* from the bowel. It is not always passed, but can be recognised in the bowel when making a rectal examination.

The diagnostic importance of this symptom is far greater than that of any other except the presence of a tumour. *Tenesmus* is often present, usually with *constipation*, but sometimes with diarrhœa. (For an example in which diarrhœa existed see Case 3.) A *tumour* is felt in about 50 per cent. of cases. It is most easily discovered when it occupies one of the flanks, the umbilical or epigastric regions; less so when enteric and lying deep in the abdomen above the ileo-cæcal valve. It may be tucked away under cover of the liver, when it may be impossible to make it out even under an anæsthetic. This occurred in one of the lecturer's cases. In a doubtful case, the importance of a thorough bi-manual rectal examination cannot be over-estimated.

Diagnosis.—The following conditions at times lead to errors of diagnosis:

(*a*) *Tubercular peritonitis.*—Mr. Eve mentioned a case that he was asked to see at the Evelina Hospital. The patient, a child, had constipation, was vomiting, and a cylindrical tumour could be felt above the umbilicus, with its long axis transverse. The temperature, however, was raised, and on bi-manual rectal examination numerous nodules were felt in the abdomen. The diagnosis of tubercular peritonitis was made, and subsequently proved to be correct.

(*b*) *Typhoid.*—The bloody stools of intussusception sometimes very closely resemble those occurring in enteric fever. If no tumour be felt and diarrhœa exists, the diagnosis of typhoid may suggest itself, but the previous history of the case and its apyrexial course should indicate the real nature of the disease.

(*c*) *Myxo-sarcoma of the omentum.*

(*d*) *Other forms of intestinal obstruction.*

(*e*) *Appendicitis.*—In this connection Mr. Eve related the following case:

CASE 3.—Edward R., aged thirteen, admitted to the London Hospital for what was supposed to be appendicitis. Ten days before admission he had been attacked with sudden pain in the left iliac fossa, vomiting, and constipation. The latter persisted for four days, and then gave place to diarrhœa; and the pain moved from the left to the right iliac fossa. There was definite resistance in the right iliac region with impaired resonance and tenderness. His temperature was 100°, but this soon fell to normal. The bowels acted from two to six times daily. On the fourth day after his admission he passed several stools stained with blood, but containing no excess of mucus. On one or two subsequent occasions he also passed loose blood-stained motions very like typhoid stools. He continued apparently in the same state until the eighth and ninth days, when he vomited once each day. On the tenth day after admission, and twentieth after onset, the abdomen was opened and an ileo-colic intussusception found, the tumour being confined entirely to the iliac fossa, just in the position where a swelling occurs in many cases of appendicitis. A considerable portion of the intussusception was reduced, but in endeavouring to reduce the iliac portion, the receiving layer gave way. The unreduced part was then excised, the distal section being three inches above the ileo-cæcal valve. An inverted Meckel's diverticulum was found to have formed the apex of the entering layer. A Murphy's button was inserted. Death took place on the fifth day from peritonitis, due to the giving way of the anti-mesenteric aspect of the bowel at the point of insertion of the button.

Treatment.—The mortality of cases treated by the expectant method is said to be 98·8 per cent.

In a lecture published in the 'Lancet,' February 20th, 1897, Mr. D'Arcy Power thus sums up: " The routine treatment of intussusception is to chloroform the patient and steadily to fill his large intestine with hot salt solution under a hydrostatic pressure of not more than three feet in a child, the fluid being allowed to remain in the intestine at least ten minutes. The earlier this method is adopted after the appearance of symptoms the better are the results obtained, but it should not be adopted in enteric intussusception, in cases where the symptoms are very acute, and in those where the absence of symptoms or signs, with a subnormal temperature, leads the surgeon to suspect that the intestine is becoming gangrenous. In these cases, and when the intussusception is not reduced after irrigation has been twice tried, and when after reduction the intussusception has twice recurred, the abdomen must be opened."

The question arises: Are injection and inflation really of sufficient utility to warrant the employment of a method which has undoubted disadvantages?

Heaton states that in his series of 104 cases, collected from the statistics of certain London and provincial hospitals, 63 were inflated, with 15 successes, *i.e.* 23 per cent. These results appeared to be exceptionally favourable. In statistics from the London Hospital (1889-98 inclusive) out of 55 cases, 24 were injected or inflated. Of these 6 died without further procedure, and the remaining 18 required operation, either because the intussusception was irreducible by this method or because reduction was incomplete and the intussusception recurred. Fourteen of the eighteen cases were capable of reduction by operation, although injection or inflation had failed to reduce them, and four only were irreducible. Not a single case, therefore, was cured by inflation or injection. Of Mr. Eve's own series of eleven cases, six were first treated by injection—four with little or no result. In the other two reduction apparently took place, but was shown afterwards to have been incomplete, for the displacement recurred in twenty-four hours, and laparotomy was performed, with a fatal result in both.

The following figures, taken from statistics prepared by Mr. H. M. Rigby (Surgical Registrar), are of interest. .They are taken from all the cases of intussusception admitted to the surgical side of the London Hospital during the last ten years (1889-98).

Cases operated upon without previous injection—Total, 26; recoveries, 6; mortality, 77 per cent. Cases operated upon after injection or inflation—Total, 18; recoveries, 3; mortality, 83 per cent.

These show a result in favour of operation alone, but the figures hardly express the difference strongly enough. For, whereas injection would be only tried in cases of recent onset, many of the cases *operated upon only* were of long duration and well-nigh hopeless, and these were bound to swell the death-rate.

The chief disadvantage of injection and inflation is that it brings about partial reduction, apparently at the time complete, thus causing the postponement of an operation that depends for its success upon its early performance. These dangers of incomplete reduction and consequent delay were pointed out in the 'British Medical Journal,' vol. ii, 1895, p. 968, by Mr. Eve, who has

since taught that it is better in all cases to operate at once, except, perhaps, in infants under three months. That an extremely early age is by no means a bar to successful operation is shown by his own cases; out of eleven operations, six cases were under six months of age; three recovered and three died. The ages of the three cases that recovered were 3, 4, and 4½ months respectively. The ages of the fatal cases were 4, 5, and 6 months.

Other dangers of injection are rupture of the bowel and severe collapse during injection.

In speaking of the mechanical aspect of inflation and injection, Mr. Eve detailed some experiments he had made on the competency of the ileo-cæcal valve in the bodies of seven infants varying in age from three months to six years. Injection of water showed that the valve was absolutely competent in two instances, and in three others only allowed a little to trickle through when the hydrostatic pressure was raised to four feet, but even then with a force insufficient to reduce an intussusception artificially produced just above the valve. In two cases the water passed readily.

With air the result was slightly better. It passed freely through the valve in three cases, causing a pressure in the ileum equal to a column of water eighteen inches high. In three cases a small quantity of air passed when pressure was very greatly raised in the large intestine; and in one case the valve was perfectly competent to air. Air therefore passed with sufficient freedom to be of use in three cases out of seven; water in two out of seven.

The importance of these facts, demonstrating that in more than half the cases in young children the valve is practically competent to air and water, is evident when we consider that 38 per cent. of cases are enteric or ileo-colic, and that therefore more than half of these would be unaffected by injection or inflation. Further, in the great majority of cases we are quite unable even to guess whether the intussusception is enteric, ileo-colic, or ileo-cæcal. We must, therefore, conclude that injection and inflation are haphazard, ineffectual, and actually dangerous.

Operative treatment.—It may be safely assumed that cases of two days or less duration, with very rare exceptions, are reducible by operation. Among twenty-five cases (London Hospital sta-

tistics) operated upon, in which the duration of the symptoms was stated in the notes, and which were not operated on for two days or more after onset, there were 19 reducible and 7 irreducible. No case lasting less than two days was irreducible. Among the reducible cases were 4 at three days, 1 at four days, 1 at seven days, 1 at fourteen days, and 1 at three weeks. The duration of the irreducible ones varied from two days to six weeks.

Mr. Eve's results at the London and Evelina Hospitals during the ten years 1889 to 1898 have been:—Total, 11; recoveries, 6; mortality, 43·3 per cent.

He had always operated at the earliest moment. He had only himself employed injection in two of his earliest cases (1893 and 1895), but in four other subsequent cases the house surgeons had injected water before informing him.

In his opinion, apart from the acuteness and duration of the displacement, the main elements in securing success in very young children were avoidance of much disturbance and manipulation of the intestine, and rapidity in operating. Dragging the intussusception out of the abdomen should if possible be avoided. The body temperature must be kept up by using a heated operating table or hot-water mattress, &c. The incision should usually be made in the right linea semilunaris, opposite to or a little below the umbilicus. This represented the centre of the circle around which the majority of intussusceptions moved. In intussusceptions occupying the right iliac fossa and flank, the incision should be made considerably lower. The reduction could, of course, only be effected by squeezing the swelling at its distal end, and not by dragging on the "entering" layer. Time did not permit of the lecturer discussing the surgical treatment when an intussusception was irreducible or gangrenous.

An examination of 55 cases of intussusception, occurring at the London Hospital during the years 1889 to 1898 inclusive, furnished the following figures:—Total, 55; deaths, 46; recoveries, 9; mortality, 83·6 per cent.

Cases injected or inflated without subsequent operation—Total, 6; recoveries, 0; mortality, 100 per cent.

Cases injected or inflated and subsequently operated upon—Total, 18; recoveries, 3; mortality, 83 per cent.

Cases operated upon only—Total, 26; recoveries, 6; mortality, 77 per cent.

Total of cases operated upon with or without previous treatment—Total, 44; recoveries, 9; mortality, 79·5 per cent.

Cases needing resection of gut—Total, 5; recovery, 0; mortality, 100 per cent.

In regard to the rate of mortality shown in this table, it must be remembered that the London Hospital is situated in a very poor neighbourhood, the inhabitants of which are ignorant, and that many of the cases are admitted in a hopeless condition.

The lecturer tendered his best thanks to Mr. Rigby for compiling, at his request, the statistics quoted, and to Mr. Barnard for assisting him in some pressure experiments on the competency of the ileo-cæcal valve.

On Rupture of the Intestine in the Newborn.

—Ciechanowski ('Przeglad lekarski,' 1897, No. 23; 'Centralbl. f. Kinderheilk.,' 1898, iii, p. 300) reports the case of a child who died with peritonitis at the age of four days. Autopsy revealed an oval opening (1 cm. by ¾ cm.) in the transverse colon near the splenic flexure, at a spot where the gut was kinked by reason of a very short mesentery. The rupture was seated at the apex of the angle formed by the bent intestine, and the mucosa was prolapsed through the breach and firmly adherent to the peritoneum. The portion of the large intestine between the seat of rupture and the cæcum was distended with fluid meconium.

Ciechanowski states that in most cases of intestinal rupture in the new-born, the *vis a tergo* of the meconium is arrested by the kinked intestine, which gives way at its weakest point; the serosa ruptures first, and is followed in turn by the muscular and mucous coats in the order named. In some cases the perforation is due to necrosis following direct injury of the intestine from without by pressure, &c. In the case under consideration there was no evidence of trauma during labour, the latter having been of unusually short duration, unaccompanied by interference of any sort. On the other hand, the very precipitancy of the labour and intensity of the expulsive efforts of the uterus may have so affected the intra-abdominal pressure of the child as to contribute to the production of the rupture.—*Pediatrics*, June, 1899.

A LECTURE-DEMONSTRATION
ON PARAPLEGIA.

Delivered at the West London Hospital,

June 29th, 1899, by

W. ALDREN TURNER, M.D., F.R.C.P.,

Assistant Physician to the Hospital, and Physician to the
Hospital for Epilepsy and Paralysis, Regent's Park.

PART I.

GENTLEMEN,—I am fortunate in being able to show you to-day a series of cases of paraplegia, or paralysis of the lower limbs, arising from the two most common causes of acute spinal disorder, namely, myelitis and traumatism.

1. The first case I shall show you is one of paraplegia occurring in a girl aged twenty-five. The history is briefly as follows: three months ago, without any apparent reason, she began to feel numbness in her feet, and this rapidly extended to the calves, then to the thighs, and finally to the waist. She continued to walk to her business of dressmaking, but found her legs were gradually getting weaker and stiffer, especially the right. She says that at this time she had some trouble in passing her urine, the bladder getting uncomfortably full before being able to void. There was also a little constipation. The chief point in connection with the onset of the disease is that it was more or less acute, developing to a considerable degree of intensity within a few days. Two months after the onset she was admitted into the hospital, and under treatment she has progressed favourably. She is able to walk, and I want you to notice her gait as she enters. She drags the left foot a little, and scrapes the left toe upon the ground. Dorsi-flexion of the left foot is not so good as dorsi-flexion of the right. There is a considerable knee-jerk on the right side, but it is not so active as that on the left; which fact corresponds with the diminished power of dorsi-flexion of the left foot and the dragging of the left toes. There is ankle clonus on both sides, but the contractions are not maintained for more than a few seconds. The plantar reflex on both sides is active, there being considerable dorsi-flexion of the whole foot, as well as dorsi-flexion

of the great toe. She has lost all the trouble she had in micturition. The grasp of her hands is quite good, but she says there is a little numbness in the fingers. There is no nystagmus nor any objective sensory phenomena. Vision is good, and articulation is unimpaired. As a result of rest in bed for a month or more she has materially improved; in fact, as she walks into the room you do not notice anything more than a paretic gait, with slight dragging of the left foot. But it is important to note that she has exaggerated knee-jerks, the left knee-jerk being more marked than the right; that there is double ankle-clonus, and that dorsi-flexion of her great toe is the type of the plantar reflex.

2. The next case is that of a man who presents practically the same symptoms as the previous one, symptoms which come on in much the same way, and in whom the disease has practically run the same course, with this difference, that he has not improved so well under treatment as the girl. He is twenty-four years of age, there is no previous history of importance except that there is a history of gonorrhœa, but no history of syphilitic infection. Five months ago, without any apparent cause, he lost power over his bladder and found he could not pass urine. This rapidly developed into overflow incontinence. He had constipation, and there was some loss of sexual power. Shortly after this he found that his legs were getting weaker, and that he dragged his left foot when walking. These symptoms continued for some time, and then he was admitted to the hospital, and has been in bed for seven weeks. His bladder trouble has improved considerably. Here you will notice much more markedly than in the previous case the spastic rigid condition of his legs while walking. There is an active knee-jerk on both sides, and a double ankle-clonus. There is very strikingly seen the dorsi-flexion of the great toe on exciting the plantar reflex. He feels numbness in the legs, but there is no objective sensory impairment, his perception of touch, pain, and temperature being quite normal. There is nothing to indicate any abnormal condition of the bones of the spine.

These, then, are two cases of paraplegia in young adults, in both of whom the symptoms came on comparatively suddenly, and in both the motor phenomena are largely in excess of the sensory ;

and both are characterised by an impairment in the expelling power of the bladder.

Before passing to the consideration of the next two cases, I shall demonstrate the normal plantar reflex, by which you will see that the toes in the normal state perform a movement of flexion. This would appear to be the case in all normal individuals except babies, who present extension of the great toe. The explanation would appear to be as follows: when there exists degeneration in the crossed pyramidal tracts, as in the two previous cases, one obtains extension of the great toe; on tickling the sole of the foot, in conditions of health, where the cross pyramidal tracts are unaffected, one finds flexion of the toes; but in babies up to four or five months of age there is an absence of medullation of the fibres of the crossed pyramidal tracts which would appear to occasion the same plantar phenomenon as sclerosis of the tracts in adults.

3. The next is a case of paraplegia with sensory symptoms. You will notice as this man walks into the room that he does not present much motor disturbance. His age is thirty-five. He was seized with violent pains of a cramping nature in the lower part of the abdomen about two months ago. These lasted for two hours, and on their going away he began to notice that the legs were numb and weak, and on trying to get up the next morning he could not stand, and there was loss of sensation in the legs. Since then he has lost the power of distinguishing between hot and cold in the legs and thighs and lower part of the abdomen; he had also lost sensation for pain. He had incontinence of urine and fæces for fourteen days after the first appearance of the symptoms. He has had a soft sore, but it was not followed by any symptoms of rash or sore throat, and he was not treated with mercury.

When he came under observation a month ago he presented sensory paraplegia, but very little motor disturbance. His case is different from the two spastic patients you have just seen. The toes of his boots are a little worn, which indicates a certain amount of scraping of the toe, although not to any great extent. There is considerable weakness of dorsi-flexion of the right foot and also weakness, but not so much, of the left; there is an active knee-jerk, more on the left side than on the right; there is ankle-clonus, though not of

the continuous type, on both sides, but more marked on the right, which has come on since admission. I shall now demonstrate the loss of sensation by means of hot and cold test-tubes or by the prick of a pin.

Now, in testing sensation, the observation of touch by itself is of no value, for tactile sensation may be present, while the sensibility to pain and to temperature may be entirely absent. But if you have tested for the sense of pain and find it absent and tactile sensibility present, you have a very important observation. With this man cold is not recognised as such, but is recognised as something warm, and a hot test-tube as "warmer." On the hands, however, the sensation is perfectly satisfactory. He calls pricking of the legs with a pin-point "touching." He has analgesia and thermal anæsthesia as described up to a line drawn round the body two inches below the umbilicus. Touch is everywhere retained. The above clearly illustrates the meaning of the statement that to test the sense of touch alone is of no clinical value. On exciting the plantar reflex you notice dorsi-flexion of the great toe.

The cases just shown may be regarded as types. The first two were types of motor, the last of sensory, paraplegia, all due to a specific cause acting upon the spinal cord, and probably of vascular nature.

4. The next case is one of paraplegia of traumatic nature, and is of interest as showing the extent of recovery which may follow a fracture dislocation of the spine; the patient having "broken his back" twenty months ago. He was a navvy working in a tunnel for the Central London Railway, and while stooping forward a mass of earth fell on to his back and fractured his spine. In addition, there were fractured the sixth and seventh ribs on the right side. As a result, there was complete paraplegia, with abolition of reflexes, loss of sensation up to the hips, retention of urine, and the other ordinary symptoms of fracture of the spine. He was treated for many months, chiefly for his bladder trouble. The injury occurred in November, 1897. I saw him for the first time on the 27th January of the following year, or three months after the injury, when the symptoms were as follows: there was some tenderness over the lumbar vertebræ, but not curvature, retention of sensibility to slight

touch all over, analgesia from the middle of the right thigh downwards, and the same on the left side, marked rigidity of both legs, active knee-jerks, no retention of urine, but merely delay and difficulty in passing it, constipation, no bed-sores, and complete motor paralysis without atrophy. He again presented himself at the hospital twenty months after the original injury, and exhibited the condition which you now see. Notice the great rigidity of the legs, while he walks with assistance. What movement there is is chiefly a rotation of the pelvis with slight flexion of the hip; he does not flex the knee at all. He cannot raise his foot to the low rail of a chair, and there is no power of dorsi-flexion. His limbs are so rigid that when he sits on a chair his legs go up as if they were wooden. The knee-jerks are marked, but there is pronounced rigidity. There is no clonus obtainable owing to the rigidity. Hot and cold are appreciated as touch. He does not feel a prick' below the knee, but he does above it. A distinct prick he calls an ordinary touch. Here again, therefore, there is complete loss of the sensibility of temperature, complete loss to pain, but tactile sensation is retained. He voids urine naturally. Therefore, not only from the point of view of the physiology of the spinal cord, of which I shall speak later, is it interesting, but also as to how far recovery may take place in the case of so severe an injury to the spinal cord.

Before finishing for to-day I would like to point out to you the value of the physical signs in these cases by means of which we may distinguish organic from functional paraplegia.

Ætiologically paraplegia may be of two kinds:— (1) organic, and (2) functional or hysterical. The latter term is bad, because it is sometimes used synonymously for paralysis which may occur in a case of disseminated sclerosis, which is often fleeting in character and liable to relapse. Is there any sign by which we may distinguish the functional from the organic? Both are characterised by paralysis, either complete or partial. Both may present anæsthesia, exaggerated knee-jerks, and ankle-clonus. It would appear as if the "toe phenomenon" which I have demonstrated in all the cases was a certain means of differential diagnosis.* But this remark requires some qualifica-

* The reader is referred to Collier's article in 'Brain,' 1899, p 71, for valuable information on the plantar reflex.

tion. All that it shows with certainty is the existence of sclerosis in the lateral columns of the spinal cord; but you may have organic disease in the central nervous system without the toe phenomenon. For instance, given a case of disseminated sclerosis with temporary paraplegia, the presence of the toe phenomenon depends upon the existence of sclerosis in the lateral columns. So that even although there exists the flexor type of plantar reflex, you cannot eliminate an organic lesion, but you may say confidently that there is not sclerosis of the crossed pyramidal tracts. Therefore the presence of the extensor type of the toe is of plantar reflex, diagnostic of a lesion of the crossed pyramidal tracts. Its absence negatives such a lesion, but it does not eliminate the possibility of such a disease as disseminated sclerosis.

My other remarks I must defer until the next lecture.

Treatment of Inoperable Cancer.—C. H. Frazier, in the 'Amer. Journ. of the Med. Sciences' for May, 1899, gives a critical summary of the recent literature of cancer. He states that of all the methods that have been suggested in the treatment of inoperable cancer, but one has had sufficient trial to warrant its recognition. The mixed toxins of erysipelas and bacillus prodigiosus have been employed by Coley in 148 cases, and by others in thirty-five cases. Of the 148 cases, the treatment was successful in twenty-four, or 15 per cent.; of the thirty-five cases, twenty-six disappeared completely, and two others decreased so much that only an insignificant node was left. The results, the writer thinks, are sufficient to warrant this form of treatment being pursued in the strictly inoperable cases. Unfortunately but little success has been obtained in its application to cancer proper; by this we understand that the writer means the carcinomata. The best results are reported in cases of spindle-cell sarcoma. The toxins have been used for some time after operation with some promise of success as a prophylactic measure. The treatment at least rests on a logical and scientific basis.—*Medicine.*

THE SIGNS AND SYMPTOMS OF EARLY PHTHISIS.*

BY

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IT has been lately said by Dr. Gee that, if phthisis is to be cured, it must be diagnosed before the appearance of physical signs. That aphorism is, happily, not quite true; it has been remarked that to accept it implies disbelief in the curability of phthisis, inasmuch as a positive diagnosis is not warrantable in the absence of physical signs. That remark, again, cannot be accepted; phthisis can be, should be, and often is, diagnosed on the symptoms alone.

The commonest and most important symptom of early phthisis, especially in young people, is dyspepsia. This dyspepsia is due to either catarrh, consequent on pyrexia, or to gastric insufficiency from anæmia. Just as the middle-aged woman who complains of heart disease is generally dyspeptic, and the. neurasthenic youth who fears he has a consumptive cough suffers from pharyngitis, so the young man or woman who complains of indigestion and loss of flesh is too often phthisical. It is the concomitance of wasting that makes the dyspepsia of initial phthisis of such diagnostic importance; in none other of the dyspepsias of young people does wasting occur. In old people, of course, an account of dyspepsia and loss of flesh offers the alternative diagnosis of Bright's disease and carcinoma.

If the dyspepsia be associated with diarrhœa, it becomes of prognostic importance, since the researches of Dr. Martin, which have been amply confirmed by post-mortem experience, clearly show that ulceration of the bowel does not occur in the early stages of phthisis unless the pulmonary infection have taken place through the intestine and mesenteric glands; when that is the case, the disease always runs a rapid course. Cough is not prominently an early symptom of phthisis, and ·ts diagnostic significance is little unless it be productive of expectoration.

* Paper read before the Medical Society of Northampton.

Pain in the chest is of still less value, unless it occur over the site of an old pleurisy, indicating the supervention of active processes.

It is worth noting that pain from the lung itself is referred to the skin, and is consequently superficial, while the pain of pleurisy is deep, and is aggravated by deep pressure only.

Hæmoptysis, whether in streaks from congested bronchioles or in large quantities from pulmonary aneurysms, is frequently the first symptom noticed.

Without harking back to the doctrines of Niemeyer, it may perhaps be said that of 100 consecutive patients, carefully questioned, 15 declared copious blood-spitting to be their first symptom.

A man who was taken into hospital and treated during two months for general debility, was repeatedly and carefully examined, and finally discharged as free from organic disease. He died the next day from pulmonary hæmorrhage.

Perhaps the belief that phthisis commencing with hæmoptysis runs a relatively favourable course originated in the pulmonary origin of certain hæmorrhages being too readily assumed; at any rate, it is a belief not supported by facts. Of course the importance attached by any one physician to hæmoptysis depends on whether or not he believes that hæmorrhage may occur from a healthy lung. But the occurrence of hæmorrhage, actually from the lungs, in a young person free from cardiac disease is by itself almost sufficient to establish the diagnosis of phthisis. The single exception is in the case of young amenorrhœic girls. Most popular beliefs have some basis in fact; the belief in vicarious menstruation certainly has. At the same time it should be remembered that in phthisical girls amenorrhœa commonly precedes by months the appearance of physical signs in the lungs. In older people the occurrence of hæmoptysis is of less importance. Emphysema, granular contracted kidney, and other disease may each bring it about.

Pleuritic effusion is an exceedingly grave symptom. In this case bacteriologists have clearly proved what clinicians dared only hint at, namely, that simple acute pleuritic effusion in young people free from rheumatism is always tubercular. The signs of apical consolidation may not appear till months after the pleurisy has cleared up, but

nevertheless the patient is a victim of incipient tuberculosis. The proof, by experimental inoculation, that these effusions are tuberculous from the first is one of the most signal services rendered by bacteriology to clinical medicine.

An account of night sweating needs to be received with considerable caution. It is a symptom that everyone knows of, and is often due to debility, badly ventilated rooms, and nightmare. But that it may, and often does, occur in what used to be called the pre-tuberculous stage of phthisis, is common knowledge. Evening pyrexia is, of course, generally associated with night; as a matter of fact, it is during the quicken- is often independent of any nightly fall of temperature. It is not common for tuberculous patients to complain of feeling feverish towards night; as a matter of fact, it is during the quickening of the circulation due to fever that they feel best. But still, the temperature may rise to 100° every evening for weeks before physical signs become apparent. The statement sometimes made, that if no regular evening rise of temperature be observed during one or two months, the suspected individual is free from phthisis, is nearly true, but not quite; for phthisis, like other specific fevers, sometimes runs an apyrexial course.

Loss of weight in an individual free from obvious disease always points towards early tuberculosis. It is, in early phthisis, due to fat absorption, a necessary consequence of the continued fever, and is usually aggravated by the curious distaste towards fat foods so commonly exhibited by consumptives.

The onset of phthisis is, in some cases, marked chiefly by anæmia,—an anæmia which does not appear to be quite the same as the anæmia of the developed disease, and is characterised by actual diminution of the number of red corpuscles and an absolute increase in the number of leucocytes and of blood platelets. It is therefore not a chlorosis, and is further distinguished from chlorosis by its constant association with loss of flesh.

Dyspepsia, loss of fat, night sweats, and anæmia together make up a symptom group which used to be thought to point to phthisis in a pre-tuberculous stage. That such a pre-tuberculous stage ever exists few now admit, but the fact remains that the symptom group just alluded to justifies the diagnosis of phthisis, in the absence of other obvious disease, even if examination of the lungs and sputum afford purely negative results. At the same time this symptom group is curiously simulated in two other conditions, and very grave errors have been committed by neglect of this fact.

The two conditions alluded to are, firstly, adenoids, secondly, dental caries. Young adults with adenoids frequently develop anæmia and dyspepsia; they cough and expectorate freely, they suffer from night sweats, and the deformity of the chest consequent on the nasal obstruction is often associated with bronchitis and emphysema. Young adults—especially young women—frequently have their mouths in a truly horrible condition from carious and suppurating stumps. It is not to be wondered at that they show signs of septic absorption, waste, become pale, and suffer from indigestion. The mimicry of early phthisis is heightened by enteric diarrhœa consequent on the imperfect mastication.

The physical characteristics of phthisical patients are too well known to need comment. But, in spite of all that has been written in derision of "scrofula," there are two well-marked types of tuberculous patients. These types correspond pretty nearly to Sir W. Jenner's types of "pretty" and "ugly" scrofula.

The pretty ones develop tuberculosis of serous membranes, and their course is quickly run; but in the ugly ones the disease is more chronic, tends to caseation, and affects the bones, glands, and mucous membranes.

Clubbed fingers are, of course, only seen in advanced disease, filbert nails indicate family predisposition only, and the red line on the gums so often mentioned is of no importance.

One other characteristic is, however, highly suggestive of a tubercular tendency, the presence in the vertebral groove of long, fine, silky hairs.

A flat or alar shape of the chest is often of help when examining suspected patients, yet tuberculosis develops more often than is thought in the barrel-shaped chest of emphysematous individuals. Emphysematous phthisis is a variety often overlooked, from the curious way in which apical emphysema may mask the percussion note and breath sounds of early consolidation.

Before discussing the physical signs proper, one may perhaps urge the propriety of examining not only the lungs but the abdomen and pelvis of suspected individuals.

Of three cases, in each of which pleurisy, thought at first to be simple, existed, in one pelvic examination revealed chronic tubercular peritonitis, in the remaining cases abdominal palpation detected masses of tuberculous glands. In each case the diagnosis of pulmonary tuberculosis was justified, months after, by the occurrence of apical consolidation.

It may perhaps be said that the physical signs of early phthisis are more often overlooked from ignorance of the sites in which they should be sought than from ignorance of the nature of the signs themselves.

It is this that makes Dr. Fowler's work of such practical importance. Dr. Fowler has defined the law that tuberculosis, in invading the lungs, follows a definite line of march, from which it is only turned aside by some disturbing factor. The starting point of this march is almost always in an upper lobe, more often in the right upper lobe than in the left. Tuberculosis spreading from the base of the lung is, pathologically, almost unknown; Dr. Kidd found it only once in 1000 cases of phthisis.

The most common situation in the upper lobe, for the primary lesion of tuberculosis, is a spot about 1¼ inches below the extreme apex, and slightly nearer the posterior and external borders than the internal. The tendency of a lesion in this situation is to spread at first backwards. Hence the earliest physical signs are to be sought for in the supra-spinous fossæ. A little later signs may be found either in the supra-clavicular fossæ or immediately below the clavicle, about 1½ inches from the edge of the sternum. A much less common site corresponds to a region on the chest wall over the first and second interspaces, just below the outer third of the clavicle. In this situation a lesion will spread rapidly downwards, involving the lower part of the upper lobe.

Signs of early tuberculosis may also be sometimes detected in the upper part of the mid-axilla. If so, a lesion may be postulated in the upper lobe, just above the interlobar septum. But such lesions, however, are seldom primary, and nearly always secondary to infiltration of the opposite

apex. In the great majority of cases, by the time that unequivocal signs of diseases can be detected in the upper lobe, signs may also be heard at the apex of a lower lobe. Such signs should be searched for opposite the fifth dorsal spine, midway between the border of the scapula and the vertebral groove. If signs be found in this region, suspicions based on doubtful signs heard in the supra-spinous fossæ are confirmed; on the other hand, if the apices of the lower lobes are quite free, caution should be exercised in drawing conclusions from signs heard over the apices of the upper lobes only. Usually infection of the lower lobe is secondary to infection of the upper lobe on the same side, but occasionally crossed lesions are met with; for example, at the right upper lobe and left lower lobe.

Another statement that may be made is this: If disease occur in one upper lobe, the lower lobe on that side will usually be affected before the upper lobe on the opposite side. It is necessary, then, in cases of suspected phthisis that these various regions be all carefully explored.

Of the signs themselves, the earliest are due, not to consolidation, but to loss of elasticity of the lung. A very small lesion, too insignificant itself to be directly detected by percussion, will involve inelasticity of the surrounding tissue. This inelasticity will reveal itself by retraction and relative immobility of the apex, and by an alteration in the percussion note. It is an old controversy, whether percussion or auscultation first reveals phthisis. Dr. Ringer is accustomed to relate how he once asked Dr. Walshe that question. Dr. Walshe answered, as he had been taught by Piorry, and Piorry by Laennec, percussion. The alteration in the percussion note first detected is not lack of resonance, but a rise in pitch and a shortening of duration. It is at a somewhat later stage that the changes in the lung become sufficient to abolish the vesicular character of the breath sounds, by prolonging the expiratory murmur and dividing it from the inspiratory sound. True bronchial breathing does not appear till consolidation has appreciably advanced. The most important point to remember, in listening to breath sounds, is that the actual loudness matters little, the quality a great deal.

With this exception, if disease be known to exist at one apex, weak breathing heard at the other

indicates that compensation has not taken place and that probably secondary infection has. The diagnostic importance of cog-wheel respiration is disputed. If heard at both apices it is of no importance, if heard at one only it indicates disease at that point.

Distinctness of vocal fremitus and mere loudness of voice conduction are of little diagnostic import, and that quality of conducted voice-sound known as pectoriloquy is seldom heard previous to cavitation.

Most of these physical signs of early phthisis are, then, signs which differ only in degree from those made out over a healthy lung, and so can only be detected by comparison of the two sides of the chest. For physiological reasons, however, more weight should be attached to alterations in percussion note when made out at the right apex, and to alterations of breath sounds at the left. Adventitious sounds are the first absolute sounds of disease to appear, in the case of phthisis. The adventitious sound first heard is usually a non-consonating râle during inspiration after cough, such a râle as may be supposed to denote bronchiole catarrh. Sometimes fine crackling sounds, closely resembling those heard in œdema or collapse of the lung, can be made out; at others, the fine moist bubbling râle, called by the older physicians humid crackling. But really any kind of adventitious sound, from a fleeting, grazing rhoncus, to a bubbling râle, may be heard. Perhaps the true crepitant râle of pneumonia is the rarest. And, after all, the diagnostic importance of the adventitious sounds lies not in their character so much as in the locality in which they are heard.

There are two signs, diagnostic in some degree of phthisis, which are made out in examining the heart. The first is an increase upwards of the superficial cardiac dulness, due, of course, to retraction of the lung; the second is a murmur of peculiar character and rhythm, which is sometimes heard in the second interspace to the left of the sternum. This murmur is approximately systolic in time, but is only heard when the cardiac systole occurs during expiration.

The murmur is soft and blowing, and is conducted into the trachea, by that fact being distinguished from aortic and mitral murmurs.

It is held to be, and undoubtedly is, indicative of apical consolidation, and the most plausible explanation of it is that it is produced by the cardiac systole accelerating the expulsion of air from the consolidated lung—that it is, in fact, an aerial murmur.

Finally comes the question of the value of sputum examination. The detection of elastic fibres, after boiling with caustic soda, is conclusive evidence of the destruction of lung tissue, and, as such, may be obtained before bacilli are found in the sputum. It is an old test, but none the less a valuable one, and one that has no fallacies. Great importance is usually attached now to the detection, by staining, of tubercle bacilli in the sputum. But the bacteriological test, after a fair experience in the wards and in the laboratory, is disappointing. In the first place, tubercle bacilli can scarcely ever be found in the sputum of acute tuberculosis, or of phthisis complicated by bronchiectasis. These are the very instances in which bacteriological aid would be welcome. Then, too, in ordinary chronic phthisis, bacilli are rarely found until physical signs and symptoms have made the diagnosis tolerably obvious. So, though a positive result undoubtedly establishes by itself a diagnosis of phthisis, a negative result, unless the sputum has been examined after incubation and experimental inoculations have been made, is valueless.

The method of experimental inoculation of the incubation of the sputa is certainly of value. But still the benefits resulting from the introduction of "scientific" methods of diagnosis scarcely compensate for the belittling of clinical experience.

To recapitulate; our aim should be, as far as possible, to diagnose phthisis, and to initiate its treatment, before the advent of physical signs. Of the physical signs themselves, alteration in the percussion note is the first to appear, and the presence of fine moist râles is the most positive.

The only facts upon which the diagnosis of phthisis can rest are the detection of tubercle bacilli in the sputum and the successful inoculation of guinea-pigs with tuberculosis from the sputum. At the same time, the diagnosis ought not to be deferred until the bacteriologist gives a positive opinion, and it must not be revoked should he obtain a negative result.

Phthisis, though the commonest fatal disease in Great Britain, is in many ways the one most

neglected. The diagnosis is too often delayed till it is painfully obvious; the treatment too often consists in routine saturation with cod-liver oil and a mad rush to death at the Antipodes. Yet the practitioner has few more important duties to the State and to the individual than the early recognition of tuberculosis. The first step towards the cure of phthisis is taken when the disease is recognised.

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XXIV.

GENTLEMEN,—We now proceed to another poison, namely, prussic acid. Prussic acid is, as you are all aware, a very deadly poison indeed. It is said that prussic acid in its strongest form, which is only a chemical curiosity, is able to kill a man instantly if he just smells the bottle. It is said that Scheele, the Swedish chemist, met his death in some such way, by preparing chemically pure hydrocyanic acid, and the vapour of it was sufficient to kill him. There is no doubt that when a sufficient dose of strong pure prussic acid is taken, death may be almost instantaneous, and may represent either an attack of epilepsy or apoplexy. But, as a rule, the poisonous effects are not quite so rapid as that. One of the first results of swallowing prussic acid is insensibility, which comes on very rapidly. Another result of swallowing it is that the respirations become exceedingly slow; indeed, the main effects of prussic acid appears to be to slow the respirations. There are often very long pauses between the respirations, and when the respiratory acts occur they are very irregular. The patient is pale and cyanotic, and the eyeballs are said to be glistening. Occasionally there have been convulsions, it is said, of a tetanic kind, but certainly convulsions of some kind are not at all uncommon in the final phase of prussic acid poisoning. Now, the strength of prussic acid varies immensely, and you know very well that when it is fresh made it has a most powerful odour, which gives many people an

almost instantaneous headache; but when the acid has been made for some time the odour is very much less pungent. It is one of those bodies which easily lose their strength, partly by evaporation of the acid, and partly by a change which ensues under the effect of light; therefore prussic acid is generally kept in dark places and in cool places, so that it may keep fairly good. Seeing that the strength of prussic acid varies almost from day to day, and that no two samples can be expected to be of exactly the same strength, unless they have been made at the same time and kept in the same way, it becomes almost idle to talk of the fatal dose of prussic acid. It is said that 20 drops of Scheele's acid has killed; further, it is said that recovery has taken place after the taking of a drachm of the acid. But after what I have said about the variation in the strength such discussions are almost useless. Next, as to the fatal period. Death from prussic acid may be almost instantaneous, and the shortest fatal period is given as two minutes. Next as to post-mortem appearances. After what I have said about the effect of prussic acid upon the respiration, you will expect to find venous engorgement everywhere. But really I think the only characteristic post-mortem evidence of prussic acid is the smell. The smell is very pungent, and it would be present in a person poisoned with prussic acid.

With regard to the treatment: as prussic acid affects the respiratory act, the treatment is best directed to stimulating the respiration. I need hardly say that if prussic acid has been taken, the stomach should be emptied, and the salts of iron may be given with advantage. Also cold affusion and artificial respiration must be persistently employed. Now, not only does prussic acid kill in this way, but cyanides kill in the same way; and a very important poison at the present time is potassium cyanide, which is used so largely in photography. I will read you a very good case of poisoning with potassium cyanide. It is taken from the 'Lancet,' December 18th, 1886. I may say that potassium cyanide, having to be dissolved, does not act so quickly as the pure acid, but the action is quite similar. Sophia P—, aged 30, with intent to commit suicide, took a piece of potassium cyanide as big as a lump of sugar at 3.45 p.m., on October 4th, 1886. In a few seconds she felt giddy, became insensible, fell on

her face without uttering a sound, and did not begin to recover consciousness for two hours. She was taken immediately to St. Thomas's Hospital, where she arrived about 4 p.m. She was then completely insensible, giving an occasional gasping respiration. Face flushed and livid; pulseless; limbs flaccid, jaws tightly clenched; pupils dilated; eyes closed; had passed urine, but not fæces; smelt strongly of bitter almonds, and was thought to be dead. Artificial respiration was commenced, and had to be continued more or less continuously for two hours. Cold affusion and flagellation of the chest with a wet towel was employed. The mouth was opened with difficulty by a gag, and the contents of the stomach were removed by the stomach-pump, and about 15 ounces of a solution of ferrous sulphate (20 grs. ad 1 oz.) were pumped in. An injection of 40 minims of ether was given. Even at the end of two hours the respirations were very shallow, and another injection of ether was given. She complained all the evening of great drowsiness and pain behind the sternum. She vomited repeatedly during the evening, and all next day she continued drowsy and her breath smelt of bitter almonds. She was discharged well at the end of four days. The artificial respiration and injection of ether were supposed to have been mainly operative in her recovery.

That is a case which is uncommon. When people commit suicide they generally do it so that they cannot be discharged afterwards, and the consequence is that we have not very frequent opportunities of really watching these cases. That is one of the great difficulties of medical jurisprudence, that unless you happen to be on the spot at the time of these cases of poisoning, you do not get an opportunity of making a careful clinical record.

Now you will find in your books on medical jurisprudence that the question is discussed as to what is the power of volition after taking a dose of prussic acid. That, of course, must depend upon the strength of the acid, and there is no doubt that if the acid be not too strong, there is considerable power of volition after taking the dose. That is to say, sufficient power of volition remains to enable the patient to put a cork back into the bottle and perhaps throw the bottle away. And this question of the power of volition has arisen in connection with cases of murder; and the point has been whether the cork could have been put into the bottle again by the suicide, or whether it had been replaced by a murderer. The matter has been fought with acrimony in courts of law, and hence it gets into all books on medical jurisprudence. It is evident that if the acid be not very strong the volition is considerable. There are reports of a case where a medical student killed himself with prussic acid and walked up or down a flight of stairs before he was seized with his fatal symptoms. Another point which has been investigated is whether there is a cry when prussic acid is taken. I mentioned to you that sometimes the symptoms of prussic acid poisoning are very much like epilepsy; occasionally an epileptic goes off into his fit with a cry, and in prussic acid the same phenomenon has been observed. But that does not appear to be a necessary symptom at all.

I would remind you that prussic acid occurs in nature, that it is found in the bitter almond, and is found in the laurel, the so-called *Prunus lauro-cerasus*, or cherry laurel. The laurel which I have here smells of prussic acid. As you know, it is used in cooking very largely for flavouring custards and so forth. Next as to the detection of prussic acid. Remember that it is volatile, and that the odour is very penetrating. If you do not get the odour given off in the cold solution you may get it off in a warm one. I will put some prussic acid into a test-tube, and of course I shall get the odour; but you may have a pure cyanide without the odour of prussic acid, though it usually has a slight smell. There is no doubt about the acid reaction, and I have as vivid a red with the test-paper as with the mineral acids. If I evaporated to dryness it would show that there are no alkalies, such as potash, combined with hydrocyanic acid. The best test is nitrate of silver, and I get with that a very dense white precipitate falling at once. I will add to it some solution of ammonia. The silver cyanide dissolves just as the silver chloride did. I will now add some nitric acid, and I want to point out to you that nitric acid in the cold does not dissolve the precipitate, and that it is soluble only in strong boiling nitric acid. Now, so far, the distinction between the chloride and the cyanide is not very marked.

Now I will heat some of the precipitate on platinum foil. First of all, of course, the water has to be driven off. You will notice that it does not begin to rocket like the oxalate did, and it has not yet melted and run together like the chloride did. I ask you to watch for the cyanogen gas being driven off, when you will see it in flame. That is the point of the matter: that whereas the chloride dries up into a horny sectile mass and lies very tranquil, the oxalate is driven about in rockety forms, while the cyanide dries up and melts, and gives off a gas which burns with a red flame. Prussic acid, being volatile, may be tested so as to show its volatility. I have here some watch-glasses, and into them I will pour some prussic acid. I now take a microscope slide and put on it some solution of nitrate of silver, and invert it over a watch-glass. I will now put a drop of ammonium sulphide on a slip and invert that over another watch-glass. On the third slip I will put some solution of caustic potash, and invert that over a third watch-glass. The first slip becomes milky from precipitation of silver cyanide. I take the second slip and dry it gently over the lamp, and then with a glass rod I moisten it with perchloride of iron, when I get the sulphocyanide of iron formed with a red colour. To the third slip I add a drop of solution of ferrous sulphate, and then a drop of dilute hydrochloric acid, with the result that prussian blue is developed. If you suspect that the contents of the stomach contain prussic acid, you can put them into a moderately narrow-mouthed jar, stand the jar in warm water, and invert above the top of the jar a plate of glass with some of these test solutions upon it.

Now prussic acid not only occurs in the laurel, but it also occurs in many rosaceous plants, and in the kernels of a great many fruits, as you are aware. The apple, the apricot, the peach, and so forth contain it.

When rich people commit murders the defences are often exceedingly ingenious. In the early forties a noted murder took place at Slough, in Bucks, and it was done with prussic acid. It was perpetrated by a man named Tawell, who had a great reputation in the city of London for piety, but, not only was that so, but he had a great reputation for profligacy in Slough, and he murdered his mistress, who lived in a house at Slough,

with prussic acid. In this case the defence set up was that the prussic acid found in the stomach came from the pips in an apple tart which deceased had eaten for her dinner. Tawell's murder of his mistress was noteworthy from another point of view, namely, that it was the first time that the electric telegraph was used for the capture of a criminal. Tawell got into the train at Slough, and the officers there wired to the police authorities at Paddington, who met him on the platform and took him into custody. Of course, it caused a great deal of excitement, and the case was a very noteworthy one.

Not only may you have lethal results from prussic acid and from cyanides, but also you may get them from oil of bitter almonds. Oil of bitter almonds is obtained from the bitter almond, and the symptoms are precisely similar to the symptoms of prussic acid poisoning. A very notable case of poisoning with cyanides was one which occurred at the close of the last century, namely, "The King v. Donellan." The case is interesting because John Hunter, who divides with Harvey the honour of being the greatest man the medical profession has ever known, was a witness. The case was as follows: in 1780 Captain Donellan was put upon his trial for the murder of his brother-in-law, Sir Theodosius Boughton. Captain Donellan and Sir Theodosius Boughton lived in the same house, and the former would benefit pecuniarily by the death of the latter. Sir Theodosius Boughton was a young baronet suffering from slight venereal disorder, for which the apothecary had ordered a draught. At 7 a.m. on the 29th of August, 1780, his mother came into his bedroom, and by the desire of Sir Theodosius Boughton administered to him the "purging draught" which had been ordered. The draught was noticed by his mother to "smell of bitter almonds." Sir Theodosius Boughton died, half an hour after taking it, in convulsions. While Sir Theodosius Boughton was dying, Captain Donellan came into the room and emptied and rinsed out the bottle into the washing basin. Captain Donellan had a chemical "still" in his room, which he had given to one of the servants to clean a few days previously, it having been recently used. The medicine furnished by the apothecary had contained no oil of bitter almonds. Sir Theodosius Boughton was exhumed, and signs of

venous congestion were found. John Hunter was called as a witness in the case, and he attested: (1) that the post-mortem signs were all due to putrefaction; (2) that death might have been due to apoplexy, and the head not having been opened it was impossible to say whether this were so or not. Being asked in cross-examination whether the fact of a man in perfect health dying convulsed immediately after swallowing a draught did not point to poison, he replied, " If I knew the draught were poison I should say most probably that the symptoms arose from that; but when I do not know that the draught was poison, when I consider that a number of other things might occasion his death, I cannot answer positively to it." Hunter admitted that it was not very probable that Sir Theodosius Boughton died of apoplexy. The final question put was : *Court :* Give me your opinion in the best way you can, one way or the other, whether, upon the whole of the symptoms described, the death proceeded from that medicine, or any other cause?—I do not mean to equivocate, but when I tell the sentiments of my own mind, what I feel at the time, I can give nothing decisive. The judge (Hon. Francis Buller) made the following comments on the testimony of Mr. Hunter: " For the prisoner you have had one gentleman called, he is likewise of the faculty, and a very able man. I can hardly say what his opinion is, for he does not seem to have formed any opinion at all of the matter. He, at first, said he could not form an opinion whether the death was or was not occasioned by the poison, because he could conceive that it might be ascribed to other causes. I wished very much to have got a direct answer from Mr. Hunter, if I could, what upon the whole was the result of his attention and application to the subject, and what was his present opinion, but he says he could say nothing decisive. So that, upon this point, if you are to determine upon the evidence of the gentlemen who are skilled in the faculty only, you have the *very positive* opinion of four or five gentlemen of the faculty that the deceased died of poison. On the other side you have what I really cannot myself call more than the *doubt* of another; for it is agreed by Mr. Hunter that the laurel water would produce the symptoms which are described. He says an epilepsy or an apoplexy would produce the same symptoms; but as to an apoplexy, it is not likely to attack so young and so thin a man as Sir Theodosius was; and as to an epilepsy, the other witnesses tell you they do not think the symptoms which have been spoken of do show that Sir Theodosius had any epilepsy at the time." The jury retired for about an hour, and then brought in a verdict of guilty, and Captain Donellan was executed a few days thereafter. A remarkable circumstance which came to light afterwards was that a still that had been recently used was discovered on the premises. Donellan was so bad a chemist that on being asked for what purpose he had procured this machine, he replied " that he used it to make lime-water to kill the flies ; " not knowing that lime-water could only be made by saturating water with lime, and that a still never was and never can be applied to such a purpose. But in his laboratory there happened to be a single number of the ' Philosophical Transactions,' and of this single number the leaves had been cut only in one place, and this place happened to contain an account of the mode of making laurel-water by distillation. That circumstance would have been particularly damning if it had been brought out at the trial. I read you that case because it is of interest not merely from the toxicological point of view, but from its being the only instance on record, I believe, in which John Hunter was in the witness-box. And he made, as every scientific man must make, a thoroughly bad witness. The lawyer likes a witness who makes up his mind and gives only one side of the question. But it is quite impossible not to agree with all the doubts that Hunter gave ; and it points to the fact that a man with a scientific mind makes what the lawyers call a bad witness, because it is the custom to call witnesses on one side or on the other.

Not at all unlike bitter almonds, and not at all unlike prussic acid, is nitro-benzole, which is one of the tar products used for giving the odour of prussic acid to sweets. This makes paper feel greasy, and if I burn it, it burns with a sooty flame, as you see. It is a thick oily liquid. It produces symptoms somewhat similar to those of prussic acid—insensibility, narcotism, and slow respiration, and sometimes great cyanosis of the face. The action is very much slower than that of the prussic acid.

CONTENTS.

NOTICE.

A CLINICAL LECTURE ON ALCOHOLIC INSANITY.

Delivered at Bethlem Royal Asylum, June 13th, 1899,

By Dr. SAVAGE.

GENTLEMEN,—Last week we took for consideration the subject of general paralysis of the insane, although we could not exhaust the subject in a single clinical lecture. The subject which I propose to take to-day is allied to it in many respects. I have so often told you that it ought to be well registered by now, that every symptom of general paralysis of the insane is represented by degrees of alcoholism. Therefore it seems quite fit that we should next examine the symptoms of alcoholism and alcoholic insanity. First of all, it is convenient to point out some conditions which may give rise to what is unsoundness of mind apart from insanity. There is a great deal of unsoundness of mind that cannot be treated as insanity, and yet the person affected is temporarily beside himself. Such is the condition, and difficulty arises because so many forms of alcoholic disorder are very like the early stages of general paralysis of the insane. For instance, yesterday I was summoned in all haste to a flat in South-West London under these circumstances : A young naval officer of twenty-three, who had married not very long ago a very excitable and attractive-looking woman, had given himself up to debauchery and drink. He had taken large quantities of brandies and whiskies and sodas, as well as champagne and beer, and, indeed, had drunk anything which came in his way. Two nights before I saw him he said, " I am going to kill myself," and, in a half-fuddled, emotional condition, he seized a knife and drew the blunt back of it across his throat. That was taken away from him. Then he said, " I shall do it still," and with tears and general emotional disorder, he produced a knife from his pocket and very deliberately proceeded to open the blade. Of course, this also was removed. Then he said he should throw himself out of window, and when

his wife came to soothe him, he said, " Do you not think we had better die together?" Here is a case of acute alcoholism, passing into alcoholic mania, or possibly only into delirium tremens. He is suffering from unsoundness of mind, and I could not tell at present whether he is going to have delirium tremens or acute delirious mania. Remember, anything which will produce delirium may produce mania. There is no hard dividing line between delirious conditions and maniacal states. Take an example suitable for the present time. A man at Epsom races won a considerable amount of money. He had been taking more whisky and brandy than was good for him before, and with his joy he drank half a bottle of whisky and became delirious, and after the delirium he became maniacal, and I was asked to see him in a condition very nearly allied to delirium tremens, except that it was more lasting and chronic. This state had gone on for some days with restlessness, sleeplessness, and general anorexia, besides sensory hallucinations, not quite of the typical terrifying form, but still of seeing people here and there, people interfering with him. All these symptoms were the symptoms of delirium, and had passed from simple delirium tremens on to mania, which lasted six or eight weeks. The man was fed well, kept quiet, freely purged, and thus got well. One has seen something similar follow the accidental taking of a drug like belladonna; and the use of a drug like chloroform or ether may start delirium which passes into mania. Now it is well, I say, to recognise that the symptoms produced by alcohol resemble those produced by general paralysis of the insane. The same parts are affected, and in the same order. The alcoholic poison affects the higher intellectual centres and defective control results, and, as I told you, the earliest symptoms of general paralysis are often hysterical and emotional and sentimental, so those of alcoholic insanity may be similar. Such was the case with the man of whom I was speaking just now, who talked about cutting his throat, about jumping out of the window, and who suggested to his wife that they should die together; he was in a highly sentimental condition, the result of alcoholism. Then, as a result of alcohol and with progressive defect of brain dependent upon degeneration in general paralysis of the insane, you get loss of power, a loss not only of the higher

mental control but of the physical control. In general paralysis you get muscular tremor, as I have pointed out, but you rarely get the tremors so well marked early in general paralysis as you do in alcoholism. In alcoholism you get tremor of the tongue and of the lips, of the hands, and a hesitating gait; which is often more clearly marked in alcoholism than in general paralysis of the insane. Then there is instability, "to one thing constant never," though with alcohol you do not often meet with the same universally benevolent grandeur. Occasionally the alcoholic is benevolent, giving away what does not belong to him, but as a rule he is not so benevolent as the general paralytic. Then with alcoholism there is a defective memory for recent events, and there is also a spirit of make-believe, to which I shall have to refer later, as this is more characteristic of the temporary dissolution produced by alcohol than of the more coarse degeneration of general paralysis. The general paralytic is quite willing to tell tales and to make romances, but the alcoholic is more filthy in his tales. It is well to remember that though in the alcoholic, dissolution is apparently more marked than in the general paralytic, the alcoholic may get well. Remember, in fact, one of my favourite maxims is, " To the alcoholic all things are possible." I scarcely ever condemn a person, however bad he or she may be physically, as incurable, if there be a distinct history of alcoholism. I always think of being called down into Surrey to see a man, and when I looked at him lying on his back breathing stertorously, perfectly unconscious, and when further examination showed that he had bed-sores, ulceration of one heel, I thought him sinking, and I said to the general practitioner, " Well, could they not let him die without my permission?" He said, " No, the friends thought they would like you to see him before he went." He told me the history, and I said, " Well, of course, it looks to me as if he is going to die, but to the alcoholic all things are possible." Four months afterwards a man tottered into my consulting room between two sticks. He said, " You do not remember me?" I said, "No." He said, " To the alcoholic all things are possible." I said, " You did not remember that?" He said, " No, but I was told when you were called in to see me die that you said, ' To the alcoholic all things are possible.'"

He said, "Do you think it is possible for me to return as sporting editor to a certain sporting paper?" I said, "Well, it is possible but not advisable." I never heard of that gentleman since, but it is a very good example of what I refer to.

1 will read the notes of the next case. His age is twenty-five, and he is a Hebrew. He has never been confined in an asylum before, but he is supposed to be alcoholic. There is no history of any neuroses in the family, and I am told there is no history of alcohol in the family. You know that alcoholics are supposed to beget alcoholics. One can go one step further and say the alcoholic frequently produces degenerate offspring, the degeneracy being more commonly seen along the nervous lines. So that you get as a result of alcoholism a tendency to weakmindedness, to idiocy, and to imbecility; in children you get a tendency to convulsive seizures, to epilepsy, with arrest of mental development. There is also a tendency to defect in the higher control, a defective power of adjustment to surroundings, which means in many cases criminality in the offspring of alcoholics. There is intolerance of suffering and pain of all kinds, and instability, which means in many of these cases the so-called inheritance of a drink tendency. The child, however, does not inherit a love of alcohol, but inherits an inability to resist temptation, so that if he finds satisfacton in stimulants he takes them. It is a weakness which he inherits rather than any definite or direct tendency to vice. In our present patient there seems to be no inheritance of either alcoholism or insanity. It is to be remembered that the alcoholic—the person who tends to drink —is often not only a descendant of an insane parent, but he is also not infrequently the offspring of a degenerate parent, that is to say of a parent who is tending to nerve decay, or is, from senile changes, degenerating generally. This particular individual is said to have been nervous, and hot tempered. He had convulsions with teething. He is said to have had meningitis when a child. The patient has been intemperate for two or three years, and has had two or three attacks of excitement after drinking. About six months ago he fell on his head. Of course that is a noteworthy point. A person who falls on his head not infrequently becomes more susceptible to the influence of drink than another. And, again quoting myself, a man who is drunk, has drunk, and has been drinking, has got his nervous system into such a condition that a blow on the sodden brain is much more likely to cause degeneracy than a blow on a brain that has not been already so injured by alcohol. It is a fact, as I pointed out to you, that in the majority of cases of injury given as a cause in general paralysis associated with syphilis, it is an injury which acts on a brain which is already disordered in its nutrition by syphilitic arteries. When the patient was admitted this year, in April, he said his flesh was falling away from his body, that his brain was shrinking away, and that he was rapidly losing flesh and sinking. At the same time he was much excited; before admission he was always taking drugs, and at times he was very much depressed, threatened the lives of his father, mother, and sisters, and more especially threatened his father. He was very violent at times. At first he was sleepless and restless. He was afraid to close his eyes, spent the evening away from home, and came back in a very excited condition, but he denied having taken any drink on such occasions. Later he began to say that he was wasting away and could see his flesh going, but notwithstanding that he ate ravenously, and since admission he has been excited and restless. He said he was so ill that it was a sin not to send him to the hospital. It seems that he had neither hallucinations of sight, hearing, or taste, but he said he felt there was a lot of blood in the left side of his head, and he felt somewhat peculiar there. Sight was apparently normal, the pupils were normal and equal, reacting to light and accommodation. The speech was rather thick, but there was no difficulty about it. His dreams were unpleasant and his memory uncertain. On admission he was suffering from hypochondriacal melancholia.

We will now see the patient and verify the symptoms as far as we can. Unfortunately the most interesting of these cases are like landscapes or rainbows—more easily seen than demonstrated. A case is brought into hospital suffering from acute alcoholism or insanity depending upon acute alcoholism, and in a very few days the whole symptoms pass off. And this I would say in parenthesis. If I am asked to see an alcoholic patient, however violent and however threatening,

—once more I refer to our naval officer whom I saw yesterday—I hesitate to certify to his insanity. In that case I was called down in all haste and was asked to bring "urgency papers" with me, so as to send him to an asylum at once because he threatened suicide, because he attempted to jump out of window, because he suggested to his wife that they should kill themselves together. It is all very well, but I am not going to sign a certificate for a patient suffering only from acute alcoholism. What would be the result? You send a patient into an asylum. In forty-eight hours he is better; at the end of a week he is so far well as to recognise where he is and what you have done, but not sufficiently well to be grateful for what you have done. The only people who have ever prosecuted me legally for having a hand in their detention in Bethlem or in their removal to asylums have been people suffering in that way. They say, "Well, I never was insane, there was nothing wrong with me." I will give you a good example. A man pursued me when I was superintendent at Bethlem as far as the House of Lords. He got beyond that even, for when he ceased to be able to trouble me directly he used to get me subpœnaed to County Courts to give evidence that at a certain time he was in Bethlem Hospital, supposed to be unable to manage his affairs, and therefore irresponsible for debts that were then in question. He was admitted into Bethlem Hospital with ideas that his body was all wrong, that people were against him, with delusions that his employer—a barrister —was against him. He made up his mind that there was only one way out of it, and that was to kill the whole of his family, and then destroy himself; and he thoughtfully prepared the epitaph which was to be put over his grave, and prepared a report which was to be given to the coroner. He provided himself with a revolver, and loaded it, a very dangerous bludgeon, and a long bowie knife, as well as some well-recognised poison, also a bottle of less recognised poison in the shape of bad whisky. On the strength of all these facts, and of his having interfered with his employer, he was taken before a magistrate, and, by experts, sent to Bethlem Hospital. In the course of a week or ten days he was very nearly well. I promised him to go to the convalescent establishment and he improved further.

But no sooner had he got his discharge than he began at once to take up every action that he could possibly start—first against his employer for discharging him, then against somebody for instructing his employer wrongfully, and then against the governor of this hospital for giving the order for his reception, and against me for receiving him and detaining him, and finally for discharging him prematurely. And so action after action was brought, and as soon as he failed in all these, whenever there was a litigious lady before the Courts he was always willing to support her, writing to her and saying he would be very glad if he could only get at Dr. Savage. Here was a type of disorder following alcoholism, and it should be a warning to you to be careful in certifying such people, because although they are of unsound mind, they themselves strongly object to being looked upon as insane, and they so nearly recover that they cannot be detained longer at present, under the law, and they are discharged with the results that one has already spoken of.

To continue then, this patient, you hear, says he saw, and still sees, visions and hears whispers. He says he has a weight at his heart, and is no longer able to resist the whispers. You will have noticed that it is difficult for these patients to explain thoroughly what they feel. It is all very well for us to talk about hallucinations, but those of us who have had no hallucinations cannot understand them. Remember that peripheral neuritis is a common symptom of alcoholism, and misinterpretations of peripheral neuritis are common. It is one of the commonest things possible for people who have suffered in this way, even though the symptoms of peripheral neuritis may not be very well marked, to tell you that they are subject to electric shocks and sparks, and they will say just what the subjects of locomotor ataxy say, that their legs are made the means of communicating electricity or are made into lightning conductors. What I have pointed out to you several times already has been this: That the insanity in nine cases out of ten is in the interpretation of the feeling. For a man to say that his head feels as heavy as lead is not an unreasonable thing; but if a man positively asserts that his head *is* lead, then he is deluded. I saw an alcoholic in a private asylum yesterday, who

had got with the peripheral neuritis a misinterpretation of his abnormal feelings. He said •they had some means of introducing wires into his muscles. I said, " Very well, where are the wires ? " He replied, " You do not suppose they are going to expose their tricks, there is such a thing as wireless telegraphy, why should not there be wireless telegraphy in this ? " He said, further, " I do not see why they should put me in connection with the comic operas; when I want to go to sleep I hear the tunes which are being played by the orchestra. It is all very well for the Queen; she may have the wires laid on at Windsor when she likes, but I do not see why I should have them when I do not like." Here, again, are hallucinations in which alcoholism has played a very important part. He said, " I do not know why, when I close my eyes at night, I should have all sorts of spirits, goblins, and phantasmagoria playing before me." All these may be looked upon as being interpretations of peripheral neuritis occurring in central and common sensory nerves. Another person suffering from alcoholic insanity tells you that he has been poisoned. Sometimes I say, " Yes, only you misinterpret the poisoning, it is the alcohol which has been poisoning you." They say, " Oh, no, it is something more than that." One notices that the tongue is dirty and furred. The patient cannot take his food properly, and he has mucous vomiting, which he says is because he is poisoned. The fact that he has sickness and a bad taste depends on the alcohol; the insanity consists in the interpretation. This man tells us he was so sleepless that he took a good deal of alcohol to induce sleep. One has to remember that taking alcohol in excess may be a cause of insanity,. or it may be a symptom of insanity. There are a number of people sent to asylums as suffering from alcoholic insanity, whereas they are suffering from a nervous disorder for which they have taken alcohol; they take to drink in the way so many, I regret to say chiefly medical men, take to morphia. Such say they had sleeplessness and neuralgia, having had five or six bad nights and anxious cases, and they have begun by taking a very small subcutaneous injection of morphia. I regret to say many doctors think it is rather nice to know what is the experience of taking morphia, and they end by becoming victims of the habit. Alcoholic insanity may be a reaction; the

patient first of all being sleepless, wretched, miserable, and excess of alcohol is again taken to overcome these troubles, and this produces further disorder which generally leads to delusions, a delusional interpretation of the feelings of peripheral neuritis.

Melancholia is a very common result of alcoholic excess. Again you may compare the acute with the chronic states. The morrow of the debauch means headache and misery. A person who has been continuing drinking for a considerable time may have an attack of mania, which lasts for a few weeks, and then passes off, the patient becoming intensely depressed.

There are some people in whom restlessness and buoyancy lead to drink. Drinking is the earliest stage of their insanity, then they may become depressed. Take as an example a man who was in Bethlem Hospital many years ago, who was a reporter to a leading paper, and a clever fellow all round. He was admitted into the hospital with acute mania following a very acute debauch. He was very excited for a time, and then he became intensely depressed. He got perfectly well and left the hospital. Next time he broke down he was buoyant and took a lot of drink, but before he came into the hospital he had passed into the depressed state again. The next time he was extremely excited, and arrived at •Bethlem one Christmas morning, and said—what was true—that he had come from Tunbridge Wells in a special train which he had secured; that he had ordered a dinner for me and a dozen others at the hotel, and that he was going to collect us all in the special train and take us down. He did *not* go back by the special train, but was persuaded to stop with me at Bethlem, and was certified. After that there came the period of depression, and when he went out he said, " Never more." His age was 40. He came of an insane stock, there having been three or four instances of madness in his family, nearly all following alcoholic excess. He said, " Next time I find I have gone over the border I shall kill myself." He did so; he blew his brains out during the next attack of depression following an acute alcoholic debauch.

There is no doubt that alcoholics are very often suicidal, much more impulsively than determinedly, as in the case I have already men-

tioned. I told you about the man I saw yesterday. I told you he had better not be certified. But his friends said, "What? Are we to see him kill himself or see him rush away, as he says he intends to do, to the North of England and say 'Good-bye' to everybody, and make a fresh start in this or the next world? Are we to submit to that?" I replied, "What would you do if a man got delirium in pneumonia or in any other fever?" "We should send for two or three nurses." That is just what you have got to do now. It may be said that he will resist, so he may in the other illnesses to which I have referred. In neither pneumonia nor in fever would you treat the delirium as the manifestations of a lunatic. It is possible he may become a lunatic, but you are not going to send him to Bethlem as a lunatic if he is suffering only from pneumonia. So you have to remember that there are cases in an early stage of lunacy which have to be put under the control of two strong men, if you can secure them, rather than certify them.

The next patient we shall see is aged 53, of good education, and has been employed in an insurance office. This is the first attack, and it has lasted seven months. The supposed cause is nervous exhaustion, that is the predisposing cause; the exciting cause is excess of alcohol. He has sometimes been threatening and dangerous to others. He has certainly been intemperate. It is not known whether there is any insanity or nervous disease in his family. There is no consumption in the family, but the patient was always nervous and excited. He has been an athlete. It is said that he used to be a moderate drinker. But he developed ideas that he was being followed and persecuted. He suffered incessantly from hallucinations of hearing, so that he heard a pot-boy calling him abominable names and following him. He also thought there was a conspiracy to do an injury to his son. He thinks he is superannuated from his office on full pay, which is not true. He also frequently hears voices calling out for help. He thinks that his son is royal, and that he himself is related to royalty. He speaks through imaginary telephones, and he believes that his affairs and interests have been placed before the Queen. He told one doctor that there was a conspiracy to steal his son away. When asked to define the danger and whence he fears it, he declines to say.

Here, then, we have a man who has been nervous, who is of middle age, and I suppose we are justified in saying has been a steady rather than an excessive drinker, who developed delusions of persecutions and hallucinations, these have been chiefly of hearing since he has been at Bethlem. His memory is very weak. He cannot tell the date, and cannot find his own room at night. He retains his ideas of persecution, and does not seem to know where he is, nor has he any idea of time. He smokes during the greater part of the day, and does not otherwise occupy himself. Those are two or three important symptoms, and I think they are to some extent dependent on a change in the peripheral nervous sensations. You all know that our idea of space or distance is not an instinctive thing, it has grown up with our sensory impressions; space and distance are of significance to us through sight and through hearing and other sensory impressions. If with alcoholism you get perversion of sensation, also perversion of hearing and sight, it is not surprising that people who are alcoholics get extremely confused about time. Of course there may be another way of interpreting the matter, namely, that the alcoholic is given to prosing and babbling a good deal, and that his memory is failing. One has only to pass through the country and listen to the talk of the common yokel to realise this, and in the higher circles, too, where drinking has been free, one has to remember that there is a tendency to boast and babble associated with alcohol. Still, I do not think that covers it. If you were to ask an alcoholic dement who has never left his house for six or eight months, where he is and what he has been doing, he will tell you he has been down to the City that day and has just got back, and that he always goes to business daily. You may ask another how he is, and he will answer "All right, I am going home soon," while he is at home all the time, and in the house he has been occupying for twenty years. Confusion of time and space, and mistakes of identity, are very common in alcoholics, and there is often an associated loss of memory, especially recent memory. One wealthy patient I had to see two or three times a year for seven years had no recent memory at all, although he remembered what he had spoken about and the books he had read and the presents he had

made, the regiment he was in, the officers he had with him, and the engagements and other things he had been through; he could talk nicely and be as companionable as possible, but once cross the line of six or seven years ago and he knew nothing; bring him down to to-day and he knew nothing. A man had looked after him in the most kind and considerate way as his gentleman companion for over two years, and had an attack of peritonitis and died, and I said to the patient I am referring to, "It is very sad about poor So-and-so." But he did not remember his existence, although he had lived with him every hour of the day for two years, and had never left him. When I went to see him I was ushered in as Dr. Savage, from London, to see him about his memory. He would mutter "Dr. Savage, from London, to see me about my memory"; and if I disappeared into the next room to get something and came back he would have forgotten all about it and would have to be told again who I was.

Now this patient before us says he went home one night and had something to drink which sent him into a deep sleep; he drank something which he found on the table. He had insensibility following it and went to bed, and when he awoke next morning the house was empty, and three or four persons came to him and after a desperate struggle brought him to Bethlem. That was on the 10th of January of the present year, and the present month is June. He tells us finally that "That is all I can say about it." Now, it would not be an easy matter to sign a certificate from the present investigation. He resents cross-examination, as these alcoholics often do. They will often say "I say so and so; if you do not believe it, well and good, there is nothing more to be said." There was a man I saw at a private asylum who said, "Well, I was told by the Lord Chancellor's visitor that a thousand people had been murdered in this asylum." I said, "Surely no Lord Chancellor's visitor could make such a statement." He said, "Then you call me a liar and I decline to talk any more upon it." I said, "But it is a very important thing to know whether the thousand people have been murdered here. Is not it possible that the whole thing may be a mistake?" He said, "What do you mean?" I said, "Well, you may have delusions." He replied, "Well, that is the doctor's way out of it; I tell you

definitely I was informed that a thousand murders had been committed in this place." Now that is another type of the interpretation of these hallucinations. A man with peripheral neuritis feels very unusual, and he thinks he is being drugged, or is going to be killed, or is being electrified; at the same time he hears shouts and screams, sees passing shadows and flashes of light, and he has hallucinations of all his senses, and he believes there is a huge massacre continually in progress. There was a Scotchman I used to see in a private asylum—a powerful fellow. He would come up to me and say "Hush, do you not hear them?" I said, "No." He said, "Oh! you are daft; I forgot. There are hundreds of the Scotch nobility being killed out there."

Remember, then, that our patient is one who has had grand ideas—he believed that the Queen was interested in him, that his son was of royal origin, that he was going to enjoy his money without earning it. So that the symptoms were very like those of general paralysis of the insane. And here it may be as well to say how you would differentiate between a man like this with such ideas from the general paralytic? First of all, the general paralytic, as a rule, sleeps better than the alcoholic. Next, the general paralytic has generally some inequality of pupils, with slowness of reaction. Next, the alcoholic may have very marked tremor of tongue and the labial muscles in the early stages, but if he has been under care for two or three months the chances are that that tremor will have passed off, whereas with the general paralytic the tremor and the hesitancy of speech will have increased in all probability. In this particular case you will have noticed that the speech is as clear and as crisp as possible. Then there comes the question of the reflexes. You may get a peripheral neuritis with changes in the reflexes, but in general paralysis of the insane you generally get a very great alteration, either in the matter of increase or defect. Then, again, the exaltation of a general paralytic is more universal and more benevolent; our patient has monomania of persecution, with the idea that his son is a grand person. Those are the essential points which distinguish general paralysis from alcoholism.

The next patient who will be brought in is aged 43, a Cambridge man, married, with nine

children. He was never in an asylum before, and it is not known whether he has had any previous similar attacks. Worry and anxiety are given as the predisposing causes. His mother is said to be very eccentric. His grandfather committed suicide, and his grandmother died of phthisis. His father was a great drinker. He was studious as a boy, but became wild when he was at the University. He had influenza badly two years ago, syphilis sixteen years ago, for which he was treated for a period of four years. He has been intemperate for two years and has been gradually getting worse. For the last thirteen years he has been suffering from fits of depression, which lasted for several weeks, during which he was morose and silent and would drink more than usual. He talked wildly at times, and had hallucinations of conversations with persons at a distance. His conduct was very erratic and unnatural. He is now suffering from mania; he talks incessantly in an irrational manner, and appears to have no idea of time, or of his own age, for he tells us he is seven years old, and at the same time says he is a grandfather. He believes he hears the voices of invisible persons speaking to him, and that an invisible body was struggling with him on the bed. He is not suicidal, but says he has been given poison by others. He had a tendency to wander from home. He has seen his own devil sit beside him, and he hears voices at a distance, but has no other hallucinations. He has complained of a fat woman trying to strangle him at night. His pupils are dilated, with slow reaction to light and to accommodation. Last week his knee-jerks were present on both sides. His sleep and his memory are bad. Here, then, is a man with insane relations, who has had a good deal of worry and anxiety, has had syphilis, and has drunk excessively. The question which should be settled in your mind is whether the patient's symptoms depend chiefly on drink, chiefly on syphilis, or chiefly on heredity. The chances are that we have here a man predisposed to nervous illness whose syphilis may have altered the nutrition of his brain through affecting his arteries, who, feeling himself going wrong, has tried to keep himself up with alcohol, and this has further tended to degeneration. The prognosis in a case of this kind would be less favourable, of course, than if there had been no syphilitic history. With

the syphilitic history it almost certainly means that the man is degenerating in other ways. The essential point of diagnosis is whether the man is suffering from general paralysis or alcoholic insanity. It is well also to remember what I have told you, that although the symptoms produced by alcohol are extremely like the symptoms produced by general paralysis, at the same time general paralysis is not very commonly produced by alcohol pure and simple. It is very uncommon to get general paralysis of the insane produced purely by drink, and this means an enormous difference in the prognosis. A man who has become demented on account of alcohol, *plus* syphilis, has definite brain changes. This man hears voices, and they tell nim to do things. They tell him not to take his food. He sees things in his room, sometimes faces. He sleeps very badly, and thinks he is visited by demons, the said demons damaging his backbone. He believes the devil to be at the bottom of all this annoyance. He does not know whether he has relations who would protect him if they could. He has lost mental power; he cannot read or write now, and he has been in the hospital since November last. Voices in these cases are of two kinds; in this case they are commanding and dangerous type. The other variety is the annoying type, which may say " You are a fool," or " an idiot," or the like. But when a patient hears voices which tell him not to eat his food, and he obeys those voices, it becomes a very grave and serious matter. This man is very conscientious. Sometimes I say that the only really conscientious people I see are in asylums, simply because they are so absolutely single-minded. The absolutely reasonable person who is governed by the fact that for every *pro* there is a *con*, and as a result does nothing, is the sort of person who drifts into an asylum. These people are said to be suffering from the folly of doubt. This man would die conscientiously, because he obeys the voices which tell him not to take his food. The British juryman says: " Oh, yes, a man understands this, that, and the other; he understands the consequences that follow from this, that, and the other ; *therefore* he is perfectly reasonable and responsible for all his acts." But this does not follow at all. We are each of us obliged to act to a certain extent on the belief that all sane persons reason along similar lines, but

the insane do not always reason thus. But when I spoke of the truly conscientious person being seen in an asylum I meant that there are men like our patient who hear voices telling them not to take their food, and they act up to their belief. You or I, hearing even a physical voice saying " You are not to take your food," would not obey. *We* cannot place ourselves in the attitude of that man who is refusing his food due to voices from an unknown source, and yet in many other respects he is perfectly reasonable. Therefore in considering insane people you cannot judge every insane act as the natural outcome of either sane or insane data. The man is physically ill and requires nourishment badly, and therefore he requires enforced feeding. Whether he will get well and return to the drink is another question which we cannot solve.

The next case you will see is a man aged 56, of good education, married, a builder, and the supposed cause of his insanity is alcoholic excess. I have told you that alcoholic excess may be a predisposing or an exciting cause, or it may act in both ways. A man may soak, and soak, till he produces temporary or partial weak-mindedness and then drink himself into acute mania. Our patient's mother is melancholic. One aunt is said to have committed suicide; maternal aunt committed suicide, two sisters said to be nervous. There is also a very strong alcoholic history on both sides. The father recently died of bronchitis and cardiac failure. There is also ichthyosis in the family. The patient has been cheerful and lazy, but latterly has become more gloomy. He is fond of his children, but neglects them for drink. He has been intemperate since boyhood, and has drunk whisky chiefly; he was a steady drinker, and there have been no temperate intervals.

The term dipsomania covers several varieties of alcoholic neuroses. There are some individuals who have recurrent attacks of insanity, each attack being associated with a desperate longing for drink. Those are true cases of dipsomania. There are others, in which there are recurring periods of depression, the only relief for which the patient finds is to drink himself into insensibility. The first cases may drink and enjoy themselves, while with the second the one object is to drink themselves out of misery. There is still a third variety of dipsomaniac. These people have

recurring attacks of excitement, during which there are recurring periods of defective self-control, this defective control showing itself by drinking anything which comes in their way—acute recurrent mania if you like, with a tendency to alcoholic excess; but while ordinary attacks of recurrent mania generally last weeks or months, recurrent attacks of drunkenness may last only a few days or a week. Here is a man who had not been a dipsomaniac but a chronic steady drinker. There is in him a general condition of apathy, an inability to enter into conversation; frequently he attempts to. pick up invisible objects, he is constantly talking to himself, and makes sudden remarks, as if in answer to a question when nothing has been said to him. His sister says that he has had for some time hallucinations of sight and hearing. He has recently become dirty in his habits, incapable of dressing himself properly, and may put on his coat as if it were a pair of trousers. He took no notice of what was going on around him, and did not recognise that he was in his own house. He answers incoherently, and sees dogs which do not exist. He had delirium tremens in 1891, the first attack having lasted six months. He saw devils in his room, and heard voices, which he answered. He also tried to jump out of the window. He has been in here five months, and says he is very ill. He does not sleep very well, but has " rheumatics and sciatica." I think one may probably attribute these to peripheral neuritis. He says the sciatica is on both sides, and if you get a double sciatica of that kind it is well to look for some central or general peripheral cause. His appetite is good. He does not remember coming into this institution at all. His memory is improving, and he knows the day of the week and the month. His reflexes are all right, and he is convalescing. Now that man is practically convalescent, and he is just in the condition when it would be worth while for the medical officer to find out whether he is grateful or not. It is a very valuable axiom that no person suffering from mental disorder is well till he recognises that he has been ill and is also grateful for the treatment. One of the proofs that nearly all alcoholics are only relieved and not cured is that they are scarcely ever cognisant of their illness or grateful for what has been done for them.

There are just a few things that one would sum

up in relation to these cases. First of all, you may have acute alcoholic bouts producing acute insanity. The weaker the patient is, nervously, the more likely is he to be upset; so that if a patient has had an injury to the head, the results will follow more quickly and with less cause. Persons also who have had a recent serious illness, and those who have had influenza badly, are often readily affected by alcohol. With a fair number of people when they get on in years their tongue is too readily loosened by a little alcohol. One more point: the general paralytic is very readily affected by alcohol, so that I have known a man who had lived freely and had been able to take any amount of alcoholic stimulants, nevertheless begin to show the symptoms of the general paralytic after taking a glass of wine. He was induced to get up and return thanks for the health of the Queen, and the single glass had made this man, who yet had been a hard drinker, drunk. That instability is one of the symptoms of the general paralytic. I have always told you that in a man having become degenerate from excess of alcohol, a comparatively small amount may start acute mania, which may be true delirious mania of the worst type, or you may have ordinary emotional mania. I have told you you may get melancholia, either coming on directly after drink, or, and more commonly, coming on as a secondary symptom following the maniacal stage. During a condition of that kind suicide is common and has to be guarded against. Delusional insanity is very commonly the result of alcohol; a large proportion of the persons who believe they are persecuted, annoyed, tortured, and interfered with are alcoholics. One has got to look at two explanations. One man suffers all sorts of uneasy feelings, and says he is persecuted. Another individual suffering similar feelings interprets them by saying that he is ill; as an example, he may say that he has got internal cancer. So that the same real disorder, the same change in the peripheral nerves, may be interpreted by one man as persecution and by another as a hypochondriacal set of complaints. A man who has been alcoholic may lose sexual power or sexual desire, or both, and as a result he may become a desperately dangerous man. Jealousy follows upon this defect. Quite recently I saw a man with a strikingly handsome wife. He had lived an alcoholic life, and had become practi-

cally impotent for eighteen months. He was and is intensely jealous, and it is a question whether he will not have to be separated from his wife to prevent danger. A patient we had in Bethlem used to be intensely jealous of his wife, who came on visiting days, and he would count by the clock the moments that it took his wife to leave him and to appear at the front gate, because he believed some of the medical officers might be intriguing with her. Remember jealousy is a common and dangerous symptom associated with alcoholism. The ordinary type of progressive alcoholic mental disorder is towards weak-mindedness, and it is of the type I have mentioned, a defective knowledge of time and space, so that they do not know where they are, they do not know how long they have been there, they make mistakes about their relations, and it is in connection with these cases that there are so many disputes about wills, because they forget so much, and they are so easily influenced by boon companions. When comparing general paralysis and alcoholic insanity, I have told you that many of the symptoms are common to the two. In the alcoholic there may be epileptic fits of a very marked kind; in fact, it is hardly possible to distinguish between the fits dependent upon alcohol and the fits dependent on, or occurring in, the early stages of general paralysis of the insane. Remember, then, that alcohol may produce temporary disorder of almost any kind. It may produce decay to any degree. You are also to bear in mind, however, that there are very few of the symptoms which may not be curable. If, however, you get advanced peripheral neuritis, with marked muscular wasting, it is very likely that these muscles may never recover; and, in the same way, if you get absolute loss of recent memory, and that loss of recent memory lasts for six months, you may practically say that that patient will never recover his memory.

There is one interesting point that I had almost omitted in reference to the loss of memory. With that loss of memory there is loss of desire for alcohol in nearly every case. Take this patient in the North, to whom I have already referred. When I visited him, I went after dinner into the billiard room and played billiards. Whisky and brandy and soda water were on a side table. The patient would go up and take a bottle of soda water, and would not touch the stronger drink;

he had no desire for it. If he had begun to recover his memory, however, he would have begun to regain his desire for drink. I was asked some time ago to go and see a lady, the wife of a leading solicitor, who had drunk herself into temporary weak-mindedness and complete loss of recent memory. The husband said to me, " Do you think my wife will ever recover ? " I said, " She will probably recover her memory, but I advise you not to pray for it, because if she gets back her memory she will also get back her desire to drink." He said, " Oh, no ; when she was comparatively well I dared leave a decanter of spirits about and she would never touch it." I said, " If she gets well she will take to drink again." The next I heard of the case was that the lady had recovered her memory and also her desire to drink. So loss of memory in alcoholics may be a blessing in disguise.

The Principal Diuretic Medicaments. —

Martz, of the Faculty of Medicine in Lyons, gives a number of prescriptions for diuretic purposes. Pills composed as follows :

> Extract of convallaria, 1 grain.
> Powdered convallaria, 1 grain.
> Make in one pill, and give one night and morning.

Or a syrup made of :

> Extract of convallaria, 4 drachms.
> Syrup of bitter orange, 6 drachms.
> A teaspoonful night and morning.

In other cases we may use :

> Tincture of squill, 75 minims.
> Syrup of bitter orange, 1 ounce.
> Distilled water, 3 ounces.
> One teaspoonful every few hours.

Or, Extract of squill, 1 grain.
> Powdered squill, 1 grain.
> Make into one pill, and give one night and morning.

Or, Theobromine, 7 grains.
> Place in one cachet, and give four a day.

Or, Caffeine, 15 grains.
> Benzoate of sodium, 30 grains.
> Syrup of bitter orange, 1 ounce.
> Water, 4 ounces.
> This may be all taken in twenty-four hours.

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A LECTURE-DEMONSTRATION ON PARAPLEGIA.

Delivered at the West London Hospital, July 3rd, 1899,

BY

W. ALDREN TURNER, M.D., F.R.C.P.,

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(*Concluded from p. 280.*)

PART II.

GENTLEMEN,—You may remember that at the last demonstration I showed you two cases of motor paraplegia, one case of sensory paraplegia, and a case of paraplegia due to a fracture-dislocation of the spinal cord, and that I pointed out the various phenomena—motor, sensory, and reflex—which characterise these conditions. At the end of the demonstration I endeavoured to point out what were the indications which would lead you to diagnose paraplegia due to an organic lesion of the spinal cord from a functional condition. To-day I propose to go over the cases more in detail, with a view to the diagnosis, first, of the level of the lesion ; secondly, its nature ; and, thirdly, the part of the spinal cord which is chiefly involved.

First, as to the *level* in the spinal cord at which the lesion is situated. You may remember that the symptoms which the first two cases presented were paraplegia of a greater or less degree, less marked in the girl than in the man. There were no sensory changes except some numbness and tingling in the legs, but there was in both, at all events at the outset, retention of urine and constipation. There was no indication of any impairment in the movements of the arms or trunk muscles. The existing phenomena pointed clearly to an affection of the spinal cord due to a lesion above the lumbar enlargement by which the impressions going to the lumbar centres were cut off, and which localised the lesion in the lower dorsal region. One cannot say absolutely how far up it extends, as·there were no objective sensory phenomena. On the other hand, in Case 3, which showed sensory paraplegia, one can accurately localise the upper limit of the lesion

owing to the presence of a definite upper margin to the anæsthesia, which was one and a half inches below the level of the umbilicus.

So one can, by means of the symptoms which such cases present, localise, with a fair amount of accuracy in motor cases only, and with an almost certain degree of security in sensory cases, the level at which the lesion is situated.

The next point has reference to the *nature* of the lesion. In all the cases I showed you, with the exception of the fracture-dislocation, which was obviously traumatic, the onset pointed to vascular disease; for this reason, that the symptoms came on more or less acutely. Within a few hours the symptoms appeared and progressed in intensity up to a certain point. Symptoms coming on in this way, not suddenly but more or less acutely during the course of a few hours, point conclusively to a vascular lesion, probably of the nature of thrombosis. Complete obstruction of the vessel lumen does not occur at once; there is a gradual blocking during a few hours, the commonest example of which is seen in the hemiplegia following thrombosis of the middle cerebral artery. A person goes to bed at night apparently quite well. He perhaps gets up early in the morning to pass water, when he may find some difficulty in voiding it, or feels some numbness down one side of the body, which he had not previously experienced. He may not take much notice of it, and goes back to bed. On rising in the morning, and on attempting to get out of bed he falls, and finds that he is more or less paralysed down one side. A history of that sort is pathognomonic of middle cerebral thrombosis. A similar condition may occur in the vessels of the spinal cord. Both the men gave a history of specific infection. One of them said he had had a soft chancre, but denied the existence of a hard chancre. The other admitted to a history of gonorrhœa. But I am inclined to think that although one cannot get a definite history of syphilis in many cases of lesion of the spinal cord, or of the central nervous system, if a history of venereal infection is obtained syphilis cannot be eliminated with certainty; and it appears to me that a history of venereal infection, whatever its nature, is quite sufficient to establish the possibility of a vascular lesion; for this reason, that we know well enough that

myelitis of thrombotic nature may follow various forms of infection, whether venereal or otherwise. With this in mind, careful inquiry should be made as to antecedent infective disease, such as the exanthemata, diphtheria, and the like. On the other hand, experience teaches that in the true degeneration conditions, namely, locomotor ataxy and general paralysis of the insane, a history of syphilitic infection is rarely absent.

Having therefore established, as far as this is possible, the existence in these three cases of a vascular lesion occurring in the lower part of the dorsal region of the spinal cord, the next point is to determine in which particular area of the spinal cord is the lesion located. This really forms the whole subject of the differential diagnosis of the various diseases of the spinal cord. Lesions of the posterior columns are, as you know, attended by ataxy, and the great disease of the posterior columns is locomotor ataxy, although this disease is not now regarded as a primary degeneration of the posterior columns. The view which finds most acceptance at the present time is that locomotor ataxy is a degeneration of the so-called sensory neuron, the fibres of the column of Goll forming a portion of this system. We may therefore eliminate the existence of disease in the posterior columns in the cases, because they were not characterised by ataxy but by motor paralysis. The second possible location of the disease is the anterior column, but disease limited to this is practically unknown. Degeneration and sclerosis in the anterior columns may occur associated with a similar condition in the lateral columns, because the fibres of the two are morphologically the same. The third possible area of the spinal cord to be involved by disease is the anterior horn. The characteristic features of disease of the anterior horns are paralysis and atrophy, because an acute lesion in this neighbourhood, usually vascular, destroys the large cells which give origin to the anterior nerve-roots which are the motor and trophic fibres for the muscles. When, therefore, the anterior horns are involved there exists muscular atrophy. Now, atrophy was not present in any of the cases which I showed you. Moreover, when there is atrophy, the electrical reactions of the muscles are altered, and that was not the case with our patients. Hence absence of atrophy and of altered elec-

trical irritability eliminates the anterior horn as the seat of the disease in these cases.

We are now thrown back on the remaining portion of the spinal cord, namely, the lateral columns. The chief tract of fibres in the lateral column is the crossed pyramidal tract, interference with which causes motor paralysis without atrophy. If there be a lesion in the lateral columns of the spinal cord cutting off impressions passing into the lower part of the cord, there is also increase in the deep reflexes below the obstruction. So that here are two points which the cases show clearly, viz. motor weakness and increase of the deep reflexes. These, taken in conjunction with the absence of atrophy and the presence of rigidity (which you will remember was most marked in the case of fracture-dislocation), establish the lateral columns as that part of the spinal cord implicated by disease.

But the question may be asked: How do you account for a vascular lesion being limited to a special portion of the cord? Roughly speaking, the vascular supply of the cord is of the following nature. There are the posterior and anterior spinal arterial systems. A branch of the anterior spinal artery passes to each anterior horn as well as to the central parts of the spinal cord. But there is a large vascular supply obtained from the periphery. In the pia arachnoid there exists a great number of vessels which send branches to supply the peripheral parts of the cord. As a result of frequent microscopical examinations of cords of the nature of the cases under consideration, thrombosis and dilatation of the vessels have been constantly observed along with inflammatory conditions in the peripheral parts of the spinal cord. The condition is one of peripheral myelitis, the central parts of the cord being rarely affected. But there is also a considerable degree of meningitis affecting the pia arachnoid surrounding the cord, so that the disease comes to be termed a peripheral meningo-myelitis; and such is the condition with which we have been dealing in the three first cases.

In the case in which sensation was lost there is a more extensive inflammatory change. Instead of the meningo-myelitis being limited to the peripheral parts of the antero-lateral columns, there is, in addition, an implication of the posterior horns and gelatinous substance of Rolando, with a peripheral myelitis invading the posterior columns.

One further point should be borne in mind in the diagnosis of these cases, and more especially in that of the girl. In her case there were none of the ordinary causes of disease; one can entirely eliminate specific trouble; there was no reason to suspect disease of the spinal column, but she is of the age at which disseminated sclerosis commonly occurs. In a large number of cases of this disease paraplegia of transitory nature, or some other temporary paralysis, is noted as the original symptom. The following may be mentioned as a characteristic type. The patient was a young woman of twenty-four years of age. From two to three years before I saw her she had a temporary loss of power in the right arm. From this recovery was complete within a short time. One year before I saw her she had a right facial paralysis, no doubt due to the same cause as the temporary brachial monoplegia a year or two before. In the present attack she had dragging of her left foot, with some numbness and sensations of pricking. In this case there was a history of three distinct paralyses—first of the right arm, then of the right side of the face, and thirdly, of the left leg, from all of whch she recovered.

In our present patient (Case 1), there is a distinct history of paraplegia coming on more or less acutely and lasting a few weeks. She came into the hospital paraplegic, was put to bed, and treated in the ordinary way, with the result that when you saw her two months after admission the paraplegia had to a large extent disappeared. Is it right to say that this girl is suffering from disseminated sclerosis? Although it may eventually turn out to be of this nature, there are at present no other indications of this disease—either nystagmus, tremors, or articulatory changes.

In conclusion, there is one point in connection with the physiology of sensation well illustrated in two of the cases (3 and 4) to which reference should be made. It was pointed out to you that in the cases which presented sensory impairment, the sense of touch was retained, but sensibility to pain and temperature was abolished. There are three forms of cutaneous sensation, touch, pain, and temperature; the first being the most general, the last the most special variety. In motor

paralysis loss of movement occurs in a definite order, the finest and most special movements first, and then the general. For instance, in a case of hemiplegia, the finer movements of the hand are always those which are most paralysed. As the patient recovers, the finer movements of the hand are the last to return; and the axiom has formulated that the more special the movement, the earlier it is paralysed and the later it is to recover. It is probable that the same rule holds good in paralysis of sensation; the most specialised form (sense of temperature) is lost first, and it is the latest to return, the most general (sense of touch) remaining longest, or is not abolished at all. In the cases of paraplegia which you saw, this rule held good; the sensation to pain and temperature were abolished while touch was retained. On this account it is believed the paths for tactile impressions are more diffuse than the paths for the more special forms of sensation; hence, if there is a lesion of the spinal cord, the greater diffuseness of the conducting fibres for touch occasions less interference with their function. There is no doubt that in early disease of the spinal cord involving the sensory tracts the sense of temperature alone may be abolished. If the disease is progressive, as in the case of tumour, the sense of pain is next lost, but touch is still retained. When this occurs one finds the combination of symptoms, which is described as characteristic of syringomyelia, viz. a disassociation of the sense of touch from pain and temperature. Now, this is not necessarily characteristic of syringomyelia, because it may be observed in meningo-myelitis and in traumatic spinal affections.

Headache and its Relation to Diseases of the Eye, Ear, Throat, and Nose.—By Dr. J. W. Jervey ('N.Y. Med. Rec.,' lv, No. 10, p. 351). The author calls attention to the frequency of headaches in diseases of the upper air passages or the ears. He reports six cases. In one there was a bursa in the pharynx; in another, hypertrophic rhinitis; in a third, atrophic rhinitis; in a fourth, pharyngitis and laryngitis; in a fifth, acute catarrhal otitis media, and in the sixth impacted cerumen. He concludes that the most frequent situation causing headache, therefore, is the naso-pharynx next to the nose itself, and finally the ear. —*The Post-Graduate*, July, 1899.

DEMONSTRATION OF CASES

AT THE MEETING OF THE

NORTH-WEST LONDON CLINICAL SOCIETY,

Held at the North-West London Hospital.

MR. MAYO COLLIER showed a girl, aged sixteen, who was sent to him suffering from a peculiar, harsh, resonant cough of three weeks' standing. Many medicines had been given without beneficial effect. The advent of the cough was sudden; it was incessant except during sleep, and was loud and resonant like the bark of a dog. There was no expectoration, no fever, and no history of hysteria, or nervous affection in the family. There was no evidence of disease in the lungs, trachea, larynx, pharynx, or nose. There was nothing to account for the cough in the whole respiratory tract. There was a history of a discharge from the right ear since infancy. The right ear canal contained much creamy pus and the hearing was very defective; the left ear was sound and hearing normal. On cleansing the right ear canal a large polypus was discovered growing from the remnants of a tympanic membrane, and this was removed under cocaine. The cough ceased immediately for two whole days, but returned at the end of the third day, lessened in frequency and intensity. The site of the stump of the polypus was much inflamed and much purulent matter was coming from the ear. An application of chromic acid was followed by a marked improvement in the general and local conditions, the cough immediately improving and disappearing in a week. The ear now discharges but very slightly, and the patient is completely free from cough.

Mr. COLLIER then showed a man, aged thirty-eight, who suffered considerable pain and discomfort in the right testis. There was a history of syphilis, but no history of tuberculosis. The testis was enlarged slightly, tender, and presented several well-marked, hard, irregular nodules. The lower half of the epididymis was much involved, hard and irregular. There was no fluid in the tunica vaginalis, and the cord was quite free from disease. The question was what was the diagnosis. Antisyphilitic treatment had produced

little effect. It was not a typical case of tubercular disease of the testis.

Mr. COLLIER, for the second time, showed a boy, aged thirteen, who was a marked case of lateral curvature of the spine, the result of malnutrition and neurasthenia, induced or associated with enlarged tonsils, post-nasal growths and nasal occlusion. Mr. Collier had operated on the nose and throat, with the satisfactory result that the back was now quite straight and the condition of the boy greatly improved. Friction, massage, and exercise to the muscles of the back had been daily resorted to.

Mr. TURNER, commenting on the case of ear cough, said he had a patient who always coughed violently on having the ears syringed.

Dr. HARRY CAMPBELL showed a case of complete paralysis and atrophy of the scapular portion of the right trapezius, apparently due to the involvement of the spinal accessory in an old scar. The case showed the important part taken by this muscle in keeping the scapula in position. The bone was considerably altered in position, the glenoid cavity looking downwards and outwards, and the inferior angle projecting as in " winged " scapula; the outer part of the clavicle was bent downwards by the fall of the acromion and coracoid process. The patient showed an occasional tendency to a form of wryneck from over-action of the opposite trapezius.

Mr. ERNEST CLARKE exhibited a series of rabbits' eyes upon which operations had been performed, and which showed the benefit of rest after operations. The cornea was incised with a triangular keratome and the aqueous evacuated from the anterior chamber, and in some cases an iridectomy was made. In one class of cases the animal was kept under the anaesthetic for a period varying from ten minutes to half an hour, and then killed; in the other class the animal was allowed to recover and finally killed after an interval ranging from half an hour to two and three quarter hours. In the first class, where rest was strictly maintained, the wound closed and the anterior chamber reformed very rapidly, and in an hour the condition of the eye was difficult to distinguish from the fellow eye which had not been operated upon (and was used as the standard). In the second class, where unrest prevailed, the anterior chamber was not fully restored

at the end of two and a half hours, the eye was irritable-looking, some inflammation was present, and the aqueous was turbid. The experiments demonstrated the extreme rapidity with which the aqueous is resecreted under favourable conditions, a knowledge of the greatest practical utility to the ophthalmic surgeon; and they also prove beyond all question the enormous value of the most rigid rest after eye operations.

The Question of the Erythema Rashes Occurring in Infectious Diseases was discussed by Chantemesse. The appearance of an erythema, after the injection of antitoxine, is at the present time, as is well known, attributed in part to the serum itself, and by other authors to the presence of streptococci, complicating the diphtheria. The question may be best studied in an infectious disease, in which the streptococcus in pure culture is present, from the beginning to the end, and this disease is erysipelas. Out of 579 cases of erysipelas, which were given no other treatment except cold baths, 28, or 5·24 per cent., presented an erythema, during the course or at the end of the disease. In cases of facial erysipelas, erythemata occurred more rarely (in 558 cases, 22 times, or 4 per cent.) On the other hand, erysipelas of the extremities yielded a much greater number of erythemata (in 24 cases, 6, or 25 per cent.). The erythema makes its appearance, especially in grave forms, between the second and ninth day of the disease, occasionally on the eleventh and twelfth day. In one case, the erythema even made its appearance after recovery from the erysipelas, twenty-eight days after the beginning of the disease. The forms of erythema here under consideration are: Erythema simplex, purpuric and polymorphous erythema. The former is, as a rule, benign, makes its appearance early, usually on the back, chest and the abdomen, in the form of more or less disseminated spots; occasionally it is located symmetrically on the hands and feet, sometimes in a papular form, often resembling the eruption of scarlatina, on occasions more rarely resembling urticaria. This simple erythema disappears in a few days, and is followed by a more or less copious scaling of the skin. It is not accompanied by fever nor by al-

buminuria. The absence of fever is an important point for differentiating this form of erythema from erysipelas migrans. The purpuric erythema is a graver form, and points to a deeper infection. Out of 6 cases, 3 were lethal, having during life exhibited fever, debility, albuminuria, articular pains, occasionally also enterorrhagia and hæmaturia. In those cases in which an examination was possible, the streptococci were discovered in the blood and in the urine during life, after death in all the rest of the organs. Of much less frequent occurrence is the polymorphous erythema. This usually invades the upper and lower extremities, excluding the face and the chest. It appears in the form of vesicles, which are filled with a sero-purulent, and sometimes with bloody contents, and frequently occurs on the mucous membrane of the mouth, pharanx and intestine. The eruption is at times so copious that it resembles a case of hemorrhagic variola. Nearly all cases suffer with albuminuria, and the urine contains streptococci. —*Société médicale des hôpitaux.*—*Pediatrics*, June, 1899.

Radical Cure of Ascites in Children.— There are now upon record perhaps a half score of cases in which the attempt has been made to cure ascites from portal obstruction by the establishment of new channels of collateral circulation through an artificially produced anastomosis of the blood-vessels of the liver with those of the abdominal wall. Ascites in childhood is not of common occurrence, but it is more likely to happen than in adult ages that the patient may be otherwise healthy. The most striking example of permanent cure of ascites from this operation is to be found in a case of Prof. Talma's. The patient was nine years old, and his cirrhosis and ascites were sequelæ of an attack of scarlatina. The operation appears to have been a perfect ultimate success, and it is significant that the most successful case of permanent cure of ascites was in a child.—*Pediatrics*, July, 1899.

Disease of the Pelvic Organs and Appendicitis.—Dührssen, in thirty abdominal sections for disease of the uterus and ovaries, found in ten cases a diseased appendix, and believes that in about thirty per cent. of gynæcological affections

the appendix will be in a normal condition.— *American Journal of Obstetrics*, July, 1899.

Angina of Scarlet Fever.—Hirschfield has studied one hundred and sixty-six cases of scarlatinal angina. They were divided into three groups: The first group comprised fifty cases in which the angina was slight, and appeared under the form of isolated or confluent *plaques* upon the tonsils, and sometimes invading the uvula and pharynx. The false membrane was distinguishable from that of diphtheria by its viscid consistence and its feeble adherence to the subjacent tissues. The submaxillary ganglia were frequently swelled. This angina exercised almost no influence upon the general state and the morbid phenomena belonging to scarlatina. Appearing ordinarily from the first to the third day, it was over in from ten to fifteen days. Treatment was purely symptomatic and not local. All the children recovered. In the second group, designated as the malignant form of scarlatinal angina, prognosis was very grave. Of twenty-seven children presenting this form of the complication, not one recovered. The angina was present at the onset, or appeared from one to four days after the beginning of the disease. The false membranes extended rapidly, the breath became foetid, and sanious fluid came from the nostrils. The swelling of the ganglia was enormous, and reached the clavicles, but yielded no pus upon incision. Other manifestations of septicæmia were suppurative otitis, purulent conjunctivitis often with panophthalmitis, suppurative arthritis, broncho-pneumonia, hæmorrhagic nephritis, and catarrhal or pseudo-membranous enteritis. In the third group of eighty-nine cases the pseudo-membranous angina was more chronic in its course. It began as a pseudo-membranous angina or as a catarrhal angina, later becoming membranous, the main disease following its regular course. At the end of the first week the fever recurred, and otitis, synovitis, or erysipelas might be found, but more frequently a new swelling of the submaxillary glands developed. With this the throat, which was usually clean, became affected again within twenty-four or forty-eight hours, and the malignant form developed, to which the child sometimes succumbed.—*Monthly Cyclopædia*, July, 1899.

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A CLINICAL LECTURE

ON

MALIGNANT DISEASE OF THE UPPER JAW.

Delivered at St. Bartholomew's Hospital, June 28th, 1899,

By H. T. BUTLIN, D.C.L., F.R.C.S., etc.,

Surgeon to the Hospital.

GENTLEMEN,—The upper jaw is liable to malignant disease of both kinds; to sarcoma and carcinoma, and, as far as I am aware, to every kind of carcinoma and sarcoma. I have examined specimens of round-celled, spindle-celled, mixed-celled, and one specimen of myeloid or giant-celled sarcoma, which grew not into the antrum, as such sarcomata do generally, but which grew between the two plates forming the anterior wall of the antrum. I have never seen such a condition either before or since. Of carcinomata I have examined a good many specimens of the ordinary squamous-celled carcinoma and specimens of cylindrical-celled carcinoma, but I cannot recall whether I have seen specimens of spheroidal-celled sarcoma. With the exception of myeloid or giant-celled sarcoma, all kinds of malignant disease of the upper jaw enjoy very evil repute. That is not merely my own idea; every surgeon who has had to do with malignant disease of the upper jaw will tell you that, whatever operation is performed, it will in all probability be rather palliative than radical. I am not quite sure how far I myself am responsible for this opinion of late years, because in the first edition, the only edition which is at present published, of the "Operative Surgery of Malignant Disease," I expressed this opinion very strongly, and it was founded not merely on what had been previously said by surgical authors, but on the cases which I then collected. I have been looking up, during the last few days, what has been said in the more modern text-books on surgery and books on tumours; and I take one as an example, Mr.

Bland Sutton's "Tumours, Innocent and Malignant," which was published in 1894. He speaks of malignant disease of the upper jaw in these terms: "It is a somewhat remarkable fact that the two most deadly situations in which sarcomata grow are the periosteum of the femur and the maxilla. In the case of the maxilla, life is rarely prolonged beyond a year; the patients in a few instances die from rapid and extensive recurrence, or from broncho-pneumonia, rarely from dissemination." Speaking of epithelioma of the upper jaw, he says: "The successful treatment of such case demands much boldness on the part of the operator, as he will find it necessary to sacrifice the eye and the orbital contents, the palatine aspect of the maxilla, and a portion of the skin covering the cheek; as a result, a large yawning cavern is left. Life is rarely prolonged, but the patients are spared much pain and discomfort. This is the variety which Réclus called 'Epithélioma térébrant,' and is usually rendered in English as 'Boring epithelioma.' It is certainly an excessively malignant and extremely insidious variety of epithelioma." I may say that in speaking of boldness on the part of the operator, Mr. Sutton has been describing a case of very advanced epithelioma of the upper jaw, and I think what he says refers to the operative treatment of such a case as that. But in any case he merely expresses the opinion which is held by most authors on the subject, that every kind of malignant disease of the upper jaw is, from the operator's point of view, a very hopeless disease, and that radical operation is rarely, if ever,—Mr. Sutton seems to regard it as scarcely ever—successful.

In looking up the subject of malignant disease of the upper jaw for my book, about eleven or twelve years ago, I collected from various sources 108 cases, the results of which are stated on the table of which I have supplied a copy to you.

You will find that out of the 108 cases, 32, or nearly one third, died from the results of the operation. There died of recurrence, 23; 44 were lost sight of; six died of other causes within three years, or were alive and well within three years, and therefore could not be counted as cures; and only *three* out of the 108 patients were known to have been alive and free from the disease more than three years after the operation.

TABLE I.—*From the First Edition of my Book.*

108 cases from various sources:

Died of the operation	32
Died of recurrence	23
Lost sight of	44
Died of other cause within three years ...	3
Alive and well within three years	3
Died of other cause after three years ...	1
Alive and well after three years	2
	108

Proportion of cured cases, calculated as 3 to 58, just over 5 per cent.

The cases lost sight of, and those who died of other cause or who were well less than three years after the operation, are left out of the account.

I think I have told you in some previous lectures that the three years limit is generally accepted by surgeons and pathologists as a reasonable period during which the patient must be quite well and free from disease before he can be regarded as a successful or cured case. Now, the proportion of cured cases is calculated as three to fifty-eight, and gives only five per cent. But it was much worse than that when I came to look into the matter, because from the account which was given of one of the three cases it was doubtful whether the disease was malignant, and I came to the conclusion that in all probability it was a tumour of fibrous or mixed fibrous and sarcomatous character, not the kind of tumour which one would look upon as decidedly malignant. At that time I formed the impression, which other people have also formed, that operations for malignant disease of the upper jaw are for the most part rather palliative than radical, and that there is very little hope indeed of a cure. And I formed that opinion very largely on what we then conceived to be the pathology of the disease. I have always held that every kind of malignant disease must be studied in each part of the body separately, that it is not merely a question of sweeping away the disease exactly in the same manner and to the same extent in all parts of the body where it may occur. The same malignant disease runs a very different course according to the part of the body in which it originates, and the same kind of operation is not equally applicable to all cases. For instance, an epithelioma can be removed with every probability of success from certain parts of the body, but in other parts the same tumour, a tumour of exactly the same structure, is, as far as I know, an almost

absolutely fatal disease, and no operation avails against it.

Our conception of malignant disease of the upper jaw—and I class all the varieties together, because they run very much the same course, except giant-celled sarcoma—the conception which I had, and which most other people, I think, had, was that the tumour, from whatever part of the jaw it arises, makes its way into the antrum, bulges out the bone in various directions, spreads from the maxilla into the parts above, below, in front, inwards into the nostril, and backwards into the spheno-maxillary fossa; that it is a disease of very considerable local malignancy, and that in a very large number of instances it will recur *in situ* even after a very large operation is performed. Further than that, if by a happy chance an operator should succeed in so far removing the disease *in situ* that it is not likely to recur locally, still the patient will almost certainly die of an affection of the lymphatic glands or from dissemination of the disease. Under those circumstances you can scarcely wonder that we became, as I suppose we did become, a little slack in our operations. We saw in the first place that the operation itself, if the entire upper jaw is removed, is a very fatal operation—about one in every three succumb to the operation itself; and one of my older colleagues some years ago came to the conclusion and acted upon it—and I think several of us have done the same kind of thing—that a sort of scooping out, rather than a more thorough operation, would be just as good a protection against recurrence of all the ordinary cases of malignant disease of the upper jaw as the set operation; and that the slighter operation would not itself be followed by the same mortality as the severer one. This was somewhat my frame of mind until a few months ago. For instance, I was not aware of any instance in this hospital of a patient who had been operated on for malignant disease of the upper jaw who could be regarded as cured by the operation. For some time past I have been getting material together, or have had it got together for me (for I have been very well assisted by Mr. Henshaw in this matter), for a new edition of " The Operative Surgery of Malignant Disease "; and one of the papers which came to my notice, dealing with upper jaw tumours, was founded on the work of the Göttingen Klinik,

where Professor König, a very excellent surgeon, was for a long time the chief surgeon of the klinik. He himself had not prepared the paper, for the work was done, as it frequently is in the Continental universities, by an assistant in the klinik, Dr. Max Martens. (' Deutsch. Zeitschrift f. Chir.,' xliv, 483, 1897.) This paper contained all the cases which had been operated on in the Göttingen Klinik during a long series of years; that is to say, the cases operated upon by all the surgeons to the klinik. These amounted to 84, and I have furnished you with a copy of the results of the operations.

TABLE II.—*From the New Edition.*

84 cases from the Göttingen Klinik:

Died of the operation	24
Died of recurrence	39
Alive and well within three years	5
Alive and well after three years	16
	—
	84

Proportion of cured cases on the above basis about 20 per cent.

In the first place, there died of the operation 24 patients out of 84—a very large proportion, quite as large, I think, as in the first table I mentioned, comprising 108 cases. I was disappointed at that, I confess, because I thought that with the general improvement in the immediate results of operations the mortality would in all probability have considerably diminished. However, I shall be able to give you the reasons for the high mortality presently. Of these 84 cases at Göttingen there died of recurrence 39 patients, that is to say, nearly half the number of patients who were operated upon. There were alive and well within three years five patients, and these must be left out of consideration from the point of view of cure. There were alive and well after three years 16 cases out of the 84. So that in the Göttingen Klinik, although there was a very heavy mortality from the operation itself, the proportion of patients cured amounted to about 20 per cent.—an enormous improvement on the cases which I had collected some years previously. I was very much struck with this, and I naturally looked to see by what means this success had been achieved. The first thing I found was that in considering the general pathology of the disease the pathologists and surgeons

of the Göttingen Klinik had regarded it from a very different point of view to that from which we had been in the habit of regarding it in this country. Putting sarcoma and carcinoma together the Göttingen authorities came to the conclusion that the disease is generally a local disease, very malignant locally and very apt to spread quickly into the surrounding parts, but only rarely likely to affect the lymphatic glands, and very rarely to be disseminated in different parts of the body. They regarded it therefore very much from the same point of view as one would regard epithelioma of the lip, as a disease locally malignant, not early affecting the lymphatic glands, and practically scarcely ever disseminated into distant parts of the body. Working from this conception of the disease they naturally performed very large operations on the tumour, removing not merely the jaw but the surrounding parts, clearing out the orbit and in some cases removing the eye; hence, therefore, the very considerable mortality from the operation. They removed the glands very rarely indeed, and yet with such large local operations they achieved a success which I had not believed to be possible.

I had finished the manuscript of the chapter on malignant disease of the upper jaw, and had quoted these statistics very largely and pointed out why so much better results had been obtained in the German klinik than had been obtained here, as far as we knew. I confess I was very satisfied, and thought that in future I should act upon the suggestions of that klinik, and regard the disease from a totally different standpoint.

Armed with this kind of information, I came to the consultations four or five weeks ago in a more hopeful mood. My colleague, Mr. Willett, showed a case of malignant disease of the upper jaw; it was very extensive disease indeed, and had been proved by microscopical examination to be an epithelioma of the upper jaw, which we have been in the habit of regarding in this country as a peculiarly insidious and malignant disease. When it came to my turn to express an opinion, I said that although I thought it was a very bad case of its kind, it was reasonable to remove it, and I mentioned what I had learnt from the German practice in regard to this disease, remarking that I thought we had not been sufficiently hopeful in the past, and that in consequence our opera-

tions had been perhaps rather too restricted, and that I hoped in future we might get better results. Then one of my colleagues made a statement which I do not know that I should have dared to make. He said he did not think much of statistics, that they were of little use because one had no notion as to what kind of case had been operated upon, and how bad the disease had been when the operation was performed. That is perfectly true, but, as I had looked into the description of the individual cases, I was certain that in many of those which were successful the disease really had appeared to be about as bad as it could possibly be. Then he made a statement with regard to his own operations, which I envied him for having the boldness to make. He said his own experience had been that every patient suffered from recurrence before leaving the hospital. I do not think he meant to say that exactly, but that is what he did say; he probably meant to say that in all the cases of which he had any knowledge recurrence had taken place at a very early date. I thought that it was not a good thing for you, who have got the world before you, and who will practice surgery in different parts of England and of the world, to come to the operating theatre and hear a surgeon of this hospital express so gloomy an opinion with regard to malignant disease of a certain part, and that, just as I was beginning to have a little more hope, you should feel there is no hope in such cases. And in order to see how far these statistics from the Göttingen Klinik could be relied on, I thought I should like to have the results of my own cases worked out. I have not had a great number, as you will see—I have only had fourteen during the time I have been assistant surgeon and surgeon to this hospital. If you look at the statistics of the hospital you will see that operations for malignant disease of the upper jaw are not very common, and I have had my share of them, and if that number were multiplied by five it would amount to a considerable total, perhaps almost as many as that given in the Göttingen Klinik, but the disease may be a little more common there than it is here. Well, Mr. Jennings, my dresser, was good enough to undertake to look up this material for me, and he has done it excellently well; he has done it so well that we have not let one case slip; we know about every case, just

as they did in the Göttingen Klinik, and it is almost as much trouble for a few cases as for many, because we have to search them out years back and look through the Government death statistics and other documents. The results certainly are very much more happy than I had the least notion they were.

TABLE III.

14 cases operated on by myself at St. Bartholomew's Hospital, collected and followed up by Mr. Jennings:

Died of the operation 4
Died of recurrence 5
Alive and well within three years 2
*Alive and well after three years 3

14

Proportion of cases cured, 25 per cent.
* I am not quite sure of the malignant nature of one of the three successful cases.—H.T.B.

To tell the truth, I was a little timid when Mr. Jennings first began to tell me what had happened; he brought me a sheaf of death certificates, and it was not very agreeable to look over them. However, it turns out that while I lost four at the operation, that is to say, much about the same proportion as in the first table, five died of recurrence, two were alive and well within three years, and three lived for more than three years after the operation; one, I believe, is dead, but she died of bronchitis or pneumonia about sixteen years afterwards, so that her death can scarcely be attributed to the operation or to the disease. On those figures my proportion of cured cases would be 25 per cent. But I do not think that is to be quite relied on; my impression from looking through the cases is that one of the patients really was not suffering from sarcoma, but I cannot find any account of the microscopical characters; it was supposed to be a cystic sarcoma. If it were not malignant that would reduce the cured cases to 16 per cent. at once, and I think that is very much more likely. Again, the number of cases is very small, and you must not compare 14 with 84 or 108 cases; it is possible that another series of 14 might not be so successful. The operations which we practised were not excessive operations, that is to say, they were not of the most severe kind, not so severe as I should perhaps be inclined to practice at the present time. If I were to perform 14 more operations for malignant disease of the upper jaw, I should probably

perform larger operations. I should expect to have a considerable mortality, perhaps quite one in three, but I should also expect to obtain greater successes.

This will give you, I trust, some kind of hope for the future, and I am anxious that you should take this matter very seriously to heart; not merely that you may have hope in such cases, but that you may give your minds to what has attracted comparatively little attention, and that is the early diagnosis of the disease. But before I enter upon that matter I want to show you two patients whom I have here for your inspection, because they illustrate a very vast difference in the results of the operation, so far as the appearance of the patient is concerned, according to whether the orbital plate is removed or not. One of the patients has only just left the hospital. In his case the entire bone was removed, and he has, what almost always occurs after complete removal of the bone, œdema of the lower eyelid, which, of course, makes a considerable difference to the appearance of the patient. Probably in the course of time that will become less, but I cannot guarantee that it will be altogether got rid of.

About the second patient I may read some of the notes made by Mr. Jennings: " A swelling the size of a walnut on the facial surface of the superior maxilla. The growth extends along the inner part of the alveolar border and hard palate as far forward as the lateral incisor tooth; it does not extend across the middle line. Left nostril obstructed, eyeball slightly pushed up, ulceration in the mouth. The skin of the cheek was not adherent, but the whole superior maxilla was removed with the exception of the orbital plate. The growth was found to have extended backwards into the spheno-maxillary fossa. The pterygoid plates and part of the pterygoid muscles were removed, but, the roof of the antrum not being affected, the plate was not removed, and the disease appears to have been completely taken out." The tumour was an epithelioma. I have not made up my mind yet as to the necessity of the removal of the orbital plate, and of course I shall watch this patient to see what happens. It is one and three quarter years since the operation, and he is still in perfect health and his speech is exceedingly good. Professor König, the Göttingen surgeon, came to the conclusion that in

every case of carcinoma the orbital plate of the superior maxillary bone ought to be removed, even if the disease is limited to the lower part of the bone. He further said that in those cases in which this had not been done, recurrence had taken place in every instance. But I am not quite sure whether the sweeping assertion with regard to taking away the orbital plate of the superior maxilla is correct or not. I am rather inclined to leave it when the disease is quite at a distance from it, for in one or two of the other cases which Mr. Jennings has looked up the operation thus performed has been successful; so at present I am not disposed to remove the orbital plate in every instance.

Of course, it stands to reason that the earlier the disease is removed, that is to say, the smaller the local disease, the less severe will the operation be, and so much less will be the mortality from the operation, and so much better will be the chance of complete cure. There is apparently not much liability to involvement of the lymphatic glands, and of course such liability will be very much less if the operation is performed at a very early date. A great part of the success of the future in these cases will depend upon early diagnosis, and it is the point to which you must direct your attention.

With regard to the upper jaw, I am not quite so hopeful of a very early diagnosis as I am with regard to a tumour in the breast or cancer of the lip or tongue, where the disease can be seen from the beginning. I am hardly in a position to tell you what are the points in early diagnosis, for we never see patients in this hospital until the disease has considerably advanced; but I have constructed in my own mind the points to which I myself should direct attention. Take an ordinary case of the disease: suppose it forms in the alveolar process, it will bulge it out and there will be a swelling which you can see, and that in a person of a certain age ought to make you very suspicious. Again, supposing the disease to be in front of the bone, it will cause some bulging of the cheek, so that swelling will be observed at a very early period. But suppose, on the other hand, as very frequently happens, that the disease either begins in the interior of the antrum, right in the substance of the bone, or that it spreads up through a tooth socket without producing any swelling

of the alveolar process, then what will be the early symptoms which will attract the attention of the surgeon and make him suspicious that the patient is likely to be suffering from malignant disease? These specimens which I have here for your inspection show what has happened. In this case the disease has extended inwards and blocked up a very large part of the nostril. In the next case the cheek is very largely affected, and there is considerable ulceration; you can also see the disease spreading up into the back of the orbit and coming through and probably destroying the lachrymal bone. I take it that the two situations in which the *first* bulging takes place are generally either above a tooth or in the interior of the nose, comparatively rarely in the orbit, because the disease more frequently begins at the lower part, so that the orbit is not affected until the tumour is of considerable size. But if we wait until there is actual tumour to be observed, all I can say is that in the majority of cases we have waited until the disease is far advanced. I would draw your attention particularly to two symptoms which I know happened in a certain number of cases. In the first place epithelioma, which really appears to be more amenable to radical treatment than most other diseases, begins almost invariably in the same way and with the same symptoms. The patient complains of toothache. You may say if he has got toothache why should that lead you to suspect malignant disease? The truth is that nis toothache is very severe and persistent. Perhaps he has one tooth taken out and then another, and I have seen many patients who have had all the teeth out on that side on which the disease in the upper jaw is beginning. Now, when a patient of a certain age has persistent toothache and the teeth have been removed comparatively early without the patient being much relieved, even if there is no particular swelling of the alveolar process, that itself affords a very strong ground for suspicion that there is some serious mischief, and it will in most instances be found to be a boring epithelioma which is making its way into the antrum. The next symptom which such a patient will present will be almost invariably a little discharge from the socket of one of the teeth; in fact, in most of the cases which I have seen, the socket from which one of the teeth has been removed never quite closed, but remained a little

open and discharged. In more than one instance I have noticed a small fungus protrusion from the socket of the tooth. The discharge is not necessarily purulent, and may be a little bloodstained, sometimes offensive. With these symptoms the diagnosis may often easily be made. Under an anæsthetic a spoon can be put into the antrum, and the material which is gradually filling the antrum, can be scraped out, and a microscopical examination can be made. In almost every such case which I have seen the diagnosis has been made with ease. The other series of symptoms is quite different, and it depends generally on another class of disease, more commonly upon sarcoma. It is obstruction in one nostril, associated, not with purulent, but with a sanguineous, discharge, and often accompanied by pain. In an adult these are always symptoms of some importance and generally of very considerable importance. If you look into the nostril in such a case and see perhaps, not an ordinary polypus, or two or three ordinary polypi, on the middle turbinated bone, or the upper part of the nostril, but a reddish fleshy-looking growth, your suspicion will be deepened; and if you take a probe and press upon the growth, and it passes into the growth and there is some considerable bleeding, then you may be practically sure that the disease is malignant, either projecting from the antrum, or perhaps growing down out of one of the sinuses. A microscopical examination of a portion of such a growth may prove the diagnosis. Remember, finally, that malignant tumours of the upper jaw are very much more common than innocent tumours there, and you should be led to suspect at a very early period the existence of malignant disease with such conditions present as I have mentioned.

A Case of Human Rumination.—Dr. Luther C. Peter ('Medical Mirror,' August) records a case of rumination in a boy nine years of age, and offers the following conclusions: 1. Rumination is a neurosis, associated with a profound neurasthenic condition or idiocy. 2. It is not, as a rule, associated with a diverticulum or dilatation of the lower end of the œsophagus, but is primarily a stomach neurosis. 3. It may at times be hereditary. 4. It occurs more frequently in males than in females. 5. It is usually within the control of the will. 6. The prognosis as to cure is good.—*N. Y. Med. Journ.*, August 19th, 1899.

CLINICAL LECTURE

ON

A CASE OF PYO-PNEUMOTHORAX FROM GANGRENE OF THE LUNG.

BY

C. O. HAWTHORNE, M.D.,

Formerly Senior Assistant to the Professor of Medicine in the University of Glasgow, and Assistant Physician to the Glasgow Western Infirmary.

GENTLEMEN,—The case of the man R. K—, æt. 56, who died three days after his admission to the hospital, is one well worthy of careful study. I propose to-day to direct your attention to the facts of the case, and to the lessons which they teach us. Let me remind you of the observations which we made together at the man's bedside. We saw him for the first time very shortly after his admission, and it was then evident that he was seriously ill. Not only was the pulse unduly rapid—it numbered 120—but there was great increase in the frequency of the respiratory movements, which reached nearly 60 per minute, and, though the patient's mind seemed clear, the effort to answer questions distressed him so much that we decided to disturb him as little as possible. With all this, however, there was no orthopnœa, and no lividity of the face or other parts; the patient did not complain of shortness of breath, but only of some pain or discomfort in his right chest; and the temperature registered only 98°. Apart from the general prostration of the patient, the most striking evidence of disease was the very rapid respiratory rate. Now, it was certain that this acceleration of the respiration was not due to fever, for the temperature was practically normal. Further, whilst a high temperature *per se* will quicken the respiration, it will at the same time quicken the heart's action to a corresponding degree, so that the normal pulse respiration ratio of 4 or 4·5 to 1 remains undisturbed. But here the respiration was quickened out of proportion to the pulse rate —the pulse respiration ratio was indeed practically as 2 to 1. Such disproportionate acceleration of the respiration always throws suspicion upon the respiratory apparatus, and we proceeded therefore at once to examine the chest. There we readily

detected evidences of serious disease. Movement of the right chest was distinctly deficient; there was neither vocal fremitus nor vocal resonance; over the whole right front percussion was tympanitic, and the respiratory murmur scarcely to be heard; the right back gave dull percussion, with absence of the respiratory murmur below, and a harsh bronchial respiratory murmur in the interscapular region; with the patient sitting up it was observed that the lower part of the right front, which had previously been tympanitic, became dull; and on gently shaking the patient we heard the splashing sound known as hippocratic succussion. That sign inevitably means the presence of both air and fluid in a space or cavity. Hence it is readily elicited in a dilated stomach, or even in a stomach of normal size, for a short time after the fluid has been swallowed. But heard, as in the present case, over the right chest, it was open to only one interpretation, viz. that the right pleural cavity contained a quantity of air and fluid. Under the pressure of this the lung was, as it were, crushed into the upper and back part of the chest, so that whilst the breath sounds were absent from the greater part of the chest, they were of a harsh, bronchial character over the condensed lung in the interscapular region. All the other physical facts supported this conclusion. The deficient movement and breath sounds showed non-expansion of the lung during inspiration; the absence of vocal fremitus and vocal resonance meant separation of the lung tissue from the chest wall; whilst the percussion, tympanitic · in one part and dull in another, the boundaries of the two areas varying with the position of the patient, was exactly what, on physical grounds, is to be expected when the pleural cavity contains a quantity of air and fluid free to move under the influence of gravitation. To all these was added hippocratic succussion as the coping-stone.

I put it to you at the first examination at the man's bedside that there was not the slightest opportunity for doubting that the case was one of right hydro-, pyo-, or hæmo-pneumothorax. The only other noteworthy physical signs were the existence of the cardiac impulse in the vertical line of the nipple (in the fifth space), and of the left border of cardiac dulness somewhat to the left of the nipple. The interpretation, of course, is that the increased pressure in the right pleural

cavity had displaced the heart somewhat to the left. It is when such increased pressure exists in the *left* pleural cavity that the most conspicuous evidences of cardiac displacement are found. Then the heart may be so far displaced to the right—dexiocardia—as to present the impulse in the neighbourhood of the right nipple. But fluid or air in the right pleura may also, as in the present case, displace the heart, though, as is to be expected from the anatomical position of the organ, less conspicuously than when the pressure is applied on the left side. Fluid or air in the right pleura may also displace the liver downwards, though we could not detect evidence of this in our present patient. Our first examination, then, brought us to this point, that we had to deal with a case in which both air and fluid were present in the sac of the pleura. The nature of the fluid was made certain on the following day, when, in consequence of increasing dyspnœa, we tapped the right chest and drew off 50 ounces of a highly offensive purulent fluid, which, on examination, showed numerous streptococci and staphylococci, but neither pneumococci nor the tubercle bacillus. It was thus certain that the case was one of pyo-pneumothorax. This, however, was far from being a complete diagnosis, for pyo-pneumothorax is never a primary event. We had, therefore, to try and determine the cause of the condition in this particular case. That, in short, was the diagnostic problem presented to us. Now, it may be taken as practically certain that, when air is present in the pleural cavity, it has either been admitted through a wound of the chest-wall or has entered from some air-filled viscus which has ruptured into the pleural cavity. At one time it was believed that under certain circumstances the pleura might " secrete " air, but such a theory will hardly be advanced to-day. It is also stated that pus or other fluid in the pleural cavity may, by decomposition, give rise to a collection of gas in the cavity and thus produce a condition of pyo-pneumothorax. If such an event ever does occur, it is certainly most exceptional. The rule that I have just stated must remain without serious qualification, and, therefore, given, as in the present instance, an absence of any external wound, we are compelled to consider how air from some air-filled viscus has managed to enter the pleural cavity. Naturally suspicion first falls upon the lungs.

Occasionally cases are recorded in which cancer or some other ulcerative lesion has led to the entrance of air from the œsophagus, stomach, or intestine ; and, of course, air, however admitted, may carry with it septic irritants which may induce purulent inflammation. We certainly have no evidence that the present case is one of these clinical curiosities. The probability in this, and, indeed, in every case of pyo-pneumothorax, is that the air has escaped from the respiratory tract. If our patient could have been shown to have ˙a fractured rib, we might have held that the pulmonary pleura had been torn by the broken bone, and that in this way air had escaped from the lung. But there was no evidence of such a fracture, and indeed no history of violence. The man, according to the statement of his landlady, had been in his usual health until nine days before admission, when he gave up his work on account of " weakness," which was followed by a good deal of vomiting; shortly after this he complained of " a severe cutting pain " in his right side, and was troubled much by cough, accompanied by a fairly copious white frothy spit, but it was not until three days before he came to the hospital that he consented to remain in bed. He had been a hard drinker for many years. How far does this history help us to determine the cause of the pyo-pneumothorax ? Well, it certainly renders ‧ it extremely unlikely that this is an example of what occasionally happens, viz. that a collection of pus opens from the pleural cavity into the lung. An empyema, or even an abscess of the liver, may discharge itself in this manner, and thus allow air to enter the pleural cavity. But neither of these conditions will develop and proceed as just described in the course of a few days. The history of the case and the generally well-nourished condition of the patient are opposed to any such theory, and we have no account of a sudden copious expectoration of pus as is likely to occur when a purulent collection from outside the lung suddenly communicates with the respiratory tract, and the sputum, as we saw it, was merely frothy mucus. We were compelled to believe, as is the usual experience, that there had been in the first place some lesion of the lung substance which had led to perforation of the visceral pleura, this being followed by the entrance of air and septic matter into the pleural cavity, and the production by

the septic irritant of a purulent pleurisy. The lesion which most commonly causes such a perforation of the pleura is a tuberculous deposit near the surface of the lung. This leads to sloughing of a small patch of the visceral pleura, and air thus escapes from the respiratory passages. Now there was certainly nothing in this patient's general appearance to suggest tubercle. On the contrary, he was an unusually strong-looking, well-nourished man, and the left lung was normal to physical examination. These facts, however, did not exclude tubercle from our consideration, for the most pronounced cases of pneumothorax occur when the tuberculous changes in the lung are but little advanced. In the more chronic cases of phthisis pulmonalis, the pleura becomes thickened as a result of chronic inflammation, and, in consequence of the formation of adhesions, pneumothorax, even if it does occur, is apt to be limited, and not, as it were, to involve the whole pleural cavity. Under such circumstances pneumothorax may cause but little disturbance. But, given an early deposit of tubercle, so situated as to lead to perforation of a previously healthy pleura, then there will be a sudden rush of air into the whole pleural cavity and a sudden compression of a lung, the greater part of which until that moment had been physiologically efficient. It is under these conditions that the acute manifestations of pneumothorax reach their most extreme form. Indeed, you may take it as a sound clinical rule that any acute pneumothorax for which no explanation can be found justifies a definite suspicion of the presence of tuberculous deposit in the lung. We could not, therefore, on the grounds that the patient showed no evidence of tubercle in his left lung, and that his general nutrition was good, positively exclude tubercle from the diagnosis, and the failure to find the tubercle bacillus, whilst valuable up to a certain point, by no means closes the discussion. We had, too, the additional statement that three of patient's children had died of " decline," a fact which might be used to strengthen the suspicion of tubercle necessarily induced by the occurrence of pneumothorax without manifest explanation. There was, however, one feature in the case that led me to question this diagnosis, and that was the rapidity with which (presuming the history of the case could be relied on) the fluid had become purulent. This, and the ex-

tremely offensive character of the fluid, seemed to show the agency of some much more virulently septic influence than the tubercle bacillus. No doubt if a patient recovers from the acute disturbance produced by a pneumothorax occurring in an early stage of phthisis, fluid will begin to accumulate in the chest, and may, indeed, entirely displace the air and completely fill the pleural cavity; and the fluid may certainly become purulent. But that in the course of a few days a large quantity of stinking pus should be found as a result of a pneumothorax dependent on pulmonary tubercle seemed to me hard to believe. It was mainly this consideration which led me to suggest that some more distinctly septic irritant than tubercle was present, and that possibly the lesion in the lung was of the nature of gangrene. In the clinical sense of the term, gangrene of the lung, unless used with some qualification, implies a disease widely spread through both lungs and characterised by an extremely fœtid and peculiar smell of the breath and abundant and highly offensive sputa. We certainly had not these features in our patient, and no one would have suggested a diagnosis of *diffuse* gangrene of the lung. But it is well-known that the gangrenous process may be *circumscribed*, and that a limited patch at the surface of the lung is an occasional cause of pneumothorax. And in reference to the absence of a foul odour in the breath and sputa, we must remember that the affected lung was practically out of action, being in a state of collapse, and, as we found on examining the chest after paracentesis, it showed no evidence of re-expansion on the removal of the fluid. Some support to the diagnosis of gangrene was afforded by the history of the patient's habit of intemperance, for whatever be the influence which sets up the necrotic process, chronic alcoholism is recognised as a predisposing cause of pulmonary gangrene. The post-mortem examination showed the suggestion of gangrene to be correct. At the upper part of the fissure between the two lobes, there was on each opposing surface a patch of necrosed pleura; below this was an area of gangrene, with a superficial extent of about two inches square extending into the lung to about the depth of an inch. Here was the explanation of the pyo-pneumothorax. The only other lesion of interest was one which, if we had been able to detect it, might have in-

clined us more strongly to a diagnosis of tubercle. In the apex of the left lung were some pigmented cicatrices and cretaceous nodules, which were doubtless the expression of a healed tuberculous lesion. In the treatment of the case we could not expect much encouragement. But it is of some value as helping to guide you in dealing with any case of pneumothorax causing acute symptoms. Of course, the man was kept absolutely at rest, and we gave him whatever nourishment he could take, which was not much; to relieve the pain in his side poultices were used, and when pain was very severe a small dose of morphine was injected hypodermically. Stimulants were demanded by the poor quality of the pulse rather than by its rapidity, and, as dyspnœa was severe and increasing, the chest was tapped. The same principles would guide you in dealing with a case of pneumothorax immediately on its occurrence, and you must remember that this is one of the emergencies of practice. The only caution I ought to add is that, if you decide to remove some of the air on account of the urgency of the dyspnœa, you should do this with a hollow needle and not with an aspirator, allowing only so much air to escape as will, and not using suction to extract it. If you use an aspirator you may reduce the pressure of the air in the pleural cavity below the pressure of air in the lung; this will be followed by a fresh rush of air into the cavity and an opening up of the wound in the visceral pleura.

There is one other question I have been asked, viz. " Why did this man not have a high temperature?" The answer is, " I do not know." No doubt for a time after the " shock " of a pneumothorax the patient is apt to have a subnormal or collapse temperature, but you do not expect this to continue for several days. And if one circumstance more than another might be expected to produce febrile disturbance, surely it is the presence of highly septic pus in a serous cavity. But the present instance shows you that this is not always the case; a similar experience is not infrequent in patients suffering from septic peritonitis. It may be suggested that the inflamed membrane prevents absorption, but our patient's general prostration and the presence of muttering delirium, &c., were doubtless the result of septic absorption, which, indeed, I presume, was the immediate cause of his death. Some one suggested that the

man was so prostrated, and his vitality so low, that he could not " produce " a high temperature. But neither will this fit the facts, for whilst during the greater part of the three days that he was here, no record exceeded 99° F., the temperature some six hours before death suddenly ran up to 101'8° and remained about that level until the end. If we cannot find an explanation, we can certainly take a note of the fact. It is one of the several features of the case well worth adding to the store of our personal experiences.

Bolognini's Sign of Measles.—A. Koppen (' Centralblatt f. Innere Medicin,' xix, p. 673) has studied anew the relation of this sign to the development of measles. It was claimed by Bolognini that it was almost pathognomonic, and that he had found it in all but two out of two hundred cases of the disorder. It appeared early in the disease, before the rash, and gradually disappeared as the exanthema developed. The sign is obtained by placing a hand upon each side of the abdomen, which is relaxed as much as possible, and pressing towards each other with a slight to-and-fro movement. With this manœuvre a slight friction is felt, as though two roughened surfaces were moved upon each other. Koppen found this sign present in 154 out of 343 examinations. He believes that Bolognini's explanation of the phenomenon is incorrect; he attributes it to fluids in the intestinal tube. In almost every case in which the sign was noted there was present more or less watery diarrhœa. The same phenomenon was also noted in cases of diarrhœa in which measles did not develop. Koppen thinks that it is a sign of measles, but that this disorder is usually accompanied by a diarrhœa of this character in its early stages. The intestinal disturbance precedes the breaking out of the eruption, and only accompanies it for a short time.—*Medicine,* August, 1899.

Cassell & Co., Limited, have issued this week an interesting volume, by Mr. Jackson Clarke, entitled " Orthopædic Surgery : a Text-book of the Pathology and Treatment of Deformities." The work contains 309 illustrations, which are excellently rendered. This lucid exposition of a difficult subject will be welcomed by all workers.

DEMONSTRATION OF CASES

AT THE MEETING OF THE

NORTH-WEST LONDON CLINICAL SOCIETY,

Held at the North-West London Hospital.

Dr. CHITTENDEN in the Chair.

Kraske's Operation for Malignant Disease of the Rectum.

MR. JACKSON CLARKE showed a specimen representing five and a half inches of a rectum which he had removed by Kraske's operation for malignant disease. The patient was not sufficiently recovered to be exhibited, but was doing well, and on that day had asked to be allowed to get up. The operation was done a fortnight ago, and the course of the case had been uneventful. He made an incision from the tip of the coccyx, curved to the left above over the left and lower part of the sacrum. Through that opening he removed the coccyx and detached the lower left part of the sacrum as high as the third sacral foramen, and then cleared the rectum and removed the implicated portion. Clinically the growth was more than within the reach of the finger, but the finger could not be got to the upper limit. It was a case in which he might have removed the growth in the bowel itself without chipping away a piece of the sacrum, simply by removing the coccyx; but there was a reason for the more extensive operation, namely, that the glands behind the rectum, in the lower part of the sacrum, were involved, and therefore he had taken the bowel away very freely; moreover, the secondary growth was adherent to the back of the middle of the rectum. The patient had one and a half inches of the rectum left at the anus. By Kraske's operation the whole of the rectum and part of the sigmoid flexure could be removed if necessary. The operation was not by any means trifling, and a considerable amount of shock resulted. In the previous operation of the kind which he brought before the Society, he could only just reach the growth with the tip of his finger. He removed the growth freely, and when he last heard of the patient, four years afterwards, he was alive and

well and earning full wages as a carpenter. He was a man of fifty-four years of age. The present patient was over sixty, but he was a strong man and a good patient, and he (Mr. Clarke) had no doubt he would be free from his local trouble. There was no evidence of growth in the liver or elsewhere. He was very pleased with the operation in suitable cases, because it left one with a feeling of having done more than a mere palliative operation, such as colotomy. The exact amount of comfort established by the operation depended somewhat on circumstances. In the present case the growth was closely adherent to the back of the rectum for some distance, and he was afraid at the operation that there might be a little sloughing of the lowest part of the upper segment of the rectum. That actually did happen, but he had secured the peritoneum very well in front, and therefore had no fear that the peritoneum would be involved. That sloughing had ceased, and he had no doubt the patient would be made more comfortable than after an ordinary colotomy. The sphincter would have some pull on the orifice, although that orifice would be a little higher and more extended than a normal anus. With regard to the choice of cases, he put them into two classes, one in which the growth could only just be felt, and the other where it could not only be reached, but the finger could be passed for some distance into it. If the finger could be got beyond the growth the peritoneum need not be opened in all cases. Still one must clear away the glands, and make the procedure as complete as in removing the breast and clearing the axilla for cancer.

Dr. PARRY, who anæsthetised the patient while Mr. Jackson Clarke operated, said he could confirm the statement that the operation was no trifle. It lasted for more than an hour, and left the patient in a rather collapsed condition. Of course the position the patient was placed in was bad for the administration of an anæsthetic, namely, kneeling on a chair at the end of the operating table, with the face downwards on the table. In the last twenty minutes of the operation the pulse began to flag very much, but a hypodermic injection of strychnine rallied him very much. The house surgeon reported that for some time after the patient was put back to bed he had to stimulate the pulse by means of brandy, &c. He referred to Mr. Swinford Edwards' success in these

operations on the rectum, and said he would recommend a patient of his to have Kraske's operation performed instead of the palliative colotomy. Probably when the operation was more generally understood the percentage of successful cases would be higher. But it was not an operation to be lightly undertaken.

Mr. TEMPLETON thought Mr. Jackson Clarke was to be congratulated upon the results of the operation so far. He (Mr. Templeton) had had some experience of removal of the rectum. He saw a few days ago a patient on whom he operated eighteen months ago by the perineal route, and there was no return. But the patient now had a very tight fibrous stricture. In that case about one inch of the mucous membrane of the rectum was left, including the sphincter, and the bowel was brought down as well as possible and stitched to the lower part, and it was at that point that the stricture occurred. The patient also complained of a constant discharge of mucus and attacks of diarrhœa. He had ceased to attend the hospital to have bougies passed, and as a consequence the stricture had been gradually forming. He would like to hear whether Mr. Clarke anticipated anything of that sort in his case from the sloughing of bowel he had spoken of, and if so he would advise that bougies should be used shortly after convalescence. He believed that by Kraske's operation as much of the rectum could be removed as one chose, and it did not matter very much whether the peritoneum was opened or not, provided the wound was packed well so as to prevent infection from the bowel.

Mr. JACKSON CLARKE, in reply, said he was glad to hear the anæsthetist's opinion of the operation from his point of view, because they had to watch very closely the dangers arising from prolonged anæsthesia as well as the severe operative measures. If the anæsthetist found that the operation was attended with great danger from his point of view, the surgeon had to make that operation as short as possible. Of course in dealing with pieces of bone, and opening up bony canals, and dividing arteries that were closely bound down to the bone and running into the bone, the only chance of keeping hæmorrhage within bounds was to operate quickly and get the bony surfaces quickly covered with sponges. It was not the hæmorrhage at the operation which

caused the risk, but the long period necessarily taken by the surgeon in clearing suspicious tissues from the hollow of the sacrum, as well as in stitching of the peritoneum and the bowel. He therefore referred to the anæsthetist to ascertain the state of the patient, so as to know what he could safely attempt; whether it would be necessary to operate quickly or to finish the work minutely as he went along. The sloughing of the rectum to which he had referred had involved only half an inch of bowel, but left a wide opening, so that there was no tendency to stricture to which Mr. Templeton had referred; moreover, the patient had a particularly energetic peristalsis, without any diarrhœa.

Case of Jaundice.

Dr. HARRY CAMPBELL showed a man 62 years of age, the subject of jaundice. His occupation was that of railway foreman. There was indefinite history of alcoholism, but he admitted having taken three pints of ale every day, beginning the day with a pint of ale on an empty stomach. Therefore it was quite possible that beer had something to do with his condition. He declared he was in good health until last Christmas, since which date he began to have loss of appetite and a slight tendency to vomiting in the morning. He had also got steadily thinner, and had lost about two and a half stones in weight. Five weeks ago he commenced to be jaundiced, and had remained so ever since, and when he came into the hospital a fortnight ago he was very jaundiced. The liver was enlarged, its lower edge being felt below the umbilicus. There had never been any ascites whatever. Regarding the diagnosis, he considered it to lie between the hypertrophic form of cirrhosis and malignant disease. When a man over sixty years of age was persistently jaundiced, he supposed the probability was that he had malignant disease somewhere about the liver.· The liver in this case seemed quite symmetrically enlarged, and there was no irregularity discernible; therefore, it seemed to correspond with what was known as pseudo-hypertrophic, or biliary, in which the liver was or might be very markedly enlarged, and in which there was jaundice without ascites. He ·believed pathologists were agreed that in the ordinary· drunkard's liver the organ at the time of death was as frequently as not larger than normal, and he could recall a number of cases of his own where the liver had been enlarged. He would be glad of the opinions of members upon the diagnosis.

Dr. CHITTENDEN was of opinion that it was a case of hypertrophic cirrhosis, because there was a long history of fair health, but generally morning sickness, which pointed distinctly to alcoholism, and because there was no irregularity, which they ought to get in malignant disease. The theory was that most cirrhotic livers began by enlargement. As a fact, people did not die in that stage as a rule, but after the liver had become smaller.

Dr. SUTHERLAND was inclined, on casual inspection of the case, to agree with Dr. Chittenden's opinion. Dr. Campbell, however, had not referred to the possibility of it being a syphilitic liver. It would probably be agreed that it was advisable, without a definite history, to go on that assumption, as that was the only direct line of treatment which could do any good. The man's pulse was bad, and he seemed rather broken down in health. There had been the loss of weight which was quite in accordance with the diagnosis of hypertrophic cirrhosis. Dr. Campbell, having watched the case, was in a better position to make the diagnosis.

Mr. JACKSON CLARKE said he had seen many livers, but he did not think his remarks on the point under discussion would be of much value. He had seen some enormous livers from hypertrophic cirrhosis, and he had seen hobnailed livers as large as a normal liver. Enlarged livers were sometimes seen from obstruction by gall-stones in the bile-ducts, a kind of "hydronephrosis" of the liver, the bile-ducts being greatly distended and filled with thin and pale bile, accompanied by great jaundice of the whole body. The present patient seemed to have had no pain and there seemed to be nothing pointing to gall-stones. It was an interesting question whether hypertrophic cirrhosis was due to alcoholism or not. From his own recollections he could not connect it very definitely with alcoholism.

Dr. CAMPBELL, in reply, laid stress on the fact that there was no evidence of the liver having increased in size since he had been in the hospital, namely, during the last month, which was in favour of the case not being malignant.

Double Congenital Dislocation of the Hip.

Mr. JACKSON CLARKE showed a girl aged 3 years, the subject of double congenital dislocation of the hip. The chief point about such a case was the waddling gait, projecting buttocks, and commencing lordosis, as well as projecting great trochanters. There was an absence of any eversion of the limb as the patient walked. The head of the femur could be felt moving on the ilium. This distinguished it at once from a condition which might simulate it, namely, double symmetrical coxa vara. In such a case as this, with a child just beginning its existence, it became a grave question as to what the surgical art can do to make its life more tolerable. The mother had stated that the child had been an in-patient for a few days in one of the large hospitals, and that the surgeon sent her out again saying that the case was incurable. That was the opinion of very many able surgeons in this country respecting congenital dislocation of the hip. During the last ten years a good deal of work had been done abroad, as well as in this country, in connection with this formidable deformity, commencing with the open operation of Hoffa, who extended Mr. Brodhurst's ideas. The latter worked subcutaneously and by manipulations. Hoffa determined to work openly by dividing all the muscles attached to the upper end of the femur, opening the joint, deepening the acetabulum, replacing the hip in the deepened acetabulum, and fixing up the limb until recovery was complete. Hoffa's operation had been done in a great many cases, and, as it was formidable, it was naturally attended with a certain amount of fatality. It could only be judged by its permanent results. These results were given very clearly by Dr. Hoffa in the last edition of his work on deformities, and he showed by skiagrams that the head of the bone remained in the newly-made acetabulum. But the functional result, which was the important matter for the patient, had not been such as to justify that method of treatment being generally adopted. Before this work of Hoffa had been completed, Lorenz of Vienna began by attacking the joint in a different way. Hoffa opened the joint from behind, Lorenz opened it from the front and did less in the way of dividing the muscles, but in other respects his operation was much on the same lines as Hoffa's. Lorenz's operation was attended with considerable fatality at first, owing to accidental circumstances, but he persevered and got some promising results. But after two or three years the results were such as to threaten to let the matter of congenital dislocation of the hip slip again to its old position in the minds of the majority of surgeons, namely, that it was an incurable affection. Lorenz had then tried a method of manipulation that embodied the methods of Schede, Paci, and others, with some original features. By anæsthetising the patient deeply with chloroform, drawing down the limb till the trochanter was at its proper place or below it, and then gradually flexing the limb to the full, inverting it, and then abducting it to the full and everting it, Lorenz found that in children up to the age of seven, and sometimes in young people of fifteen or twelve, he was able to effect a real reposition of the displaced head of the femur. The method had been adopted by Hoffa in suitable cases, and by many surgeons abroad and in this country. At the last Congress, held at Moscow, Lorenz was able to bring forward a considerable number of cases—he thought, about 13c—and in these with children up to the age of five years—some of them bilateral cases and some unilateral—he had had a good proportion of successful cases. By successful cases was meant those in which stability was given without complete permanent reposition, as well as those in which there was reposition as shown by radiograph, and stable reposition of the joint at intervals of two or three years after commencing treatment. The patients walked about well without instruments and without fear of displacement of the head of the femur, and without lordosis. About one fourth of the successful cases were permanent repositions, and the remaining three fourths were ameliorations of the condition. The limb was kept in the abducted position for three months in plaster, with some eversion of the foot. That brought the head of the femur forwards, so that the successful cases which were not true repositions were such as had the head of the femur permanently turned forwards—that is to say, cases with a forward displacement substituted for a backward displacement. It was known that a number of cases of congenital dislocation of the

hip were naturally in the former position, and some of those cases were able to get about very well and had none of the drawbacks belonging to backward displacement. Therefore it was an imitation of what one saw occasionally in Nature. Some months ago he adopted that method at that hospital in a case of unilateral displacement on a child aged seven years. By Lorenz's method he was able to hear the head of the femur slip into the shallow socket, when the movement of abduction was performed. The child was still under treatment and was now walking about wearing an instrument which enabled him to keep up the abduction in a lessened degree. The child had now 45° of abduction, and by raising the sound foot four or five inches she was able to walk about fairly well. There was evidence in that case that there was a real reposition effected, as claimed by Lorenz. Mr. Clarke then proceeded to discuss the indications for and against operation in the case of the child now exhibited, and asked whether the operation was worth while. He had a considerable number of cases of congenital dislocation of the hip brought to *him where no treatment had been adopted. Young women, whose whole lives were ruined by the horrible gait and distorted and stunted appearance, were generally brought to him on account of pain in the spine, because with a backward displacement of the head of the bone, the spinal column had to be arched back. As the patient neared middle life that deformity began to be accompanied by severe pain. Something could be done in early life to prevent this distortion and misery, and, however much patience was needed, he thought that in such a case the severity of the condition quite justified it all.

Dr. SUTHERLAND asked if Mr. Jackson Clarke would exhibit the case some time next year to show the results, if any. These cases came before the physicians also. A succession of operations had been devised, which had lasted for a time and then fallen into disuse, probably on account of the person who introduced the operation not finding success with it. Personally he was sceptical about the results of any treatment in that condition. He had seen so-called good results, but from his (Dr. Sutherland's) point of view, they were really failures. If by the bloodless method Mr. Clarke had described, patients had been

made to walk better, he would be extremely interested.

Mr. TEMPLETON said the treatment of such cases presented room for discussion, and he thought the experience of the last few years pointed to the unsatisfactory position of operative treatment. He had seen a number of these cases treated by operation, but the results had not been very encouraging; some of the children had undergone several operations. He thought the most successful method was that which Mr. Clarke referred to, when the head of the bone was placed in the forward position rather than an attempt being made to form a new acetabulum and get the bone to retain its position there. He thought permanency of position could best be assured by placing a wire through the anterior part of the ilium and transfixing the neck, and in that way creating a temporary hinged joint. In that procedure the wire was removed in six weeks to two months, and a certain amount of movement was possible at the new joint. But the question remained, was the child any better than before any operation had been performed? The condition was nearly always found in girls, and in a large proportion of the cases he thought there was some deformity about the head of the femur or some deficiency in the upper rim of the acetabulum. In one specimen he had seen the upper end of the femur shaped like a hook, in which case, when extension was attempted during life, increase of length was practically impossible. Sometimes the condition was associated with other deformities of the joints; in two instances there was some deformity of the temporo-maxillary articulation.

Dr. PARRY was very sceptical of the results of the proposed operation.

Mr. JACKSON CLARKE, in reply, said he brought the child because it was important that a case should be shown before as well as after operation. The experience of Dr. Sutherland and Dr. Parry that the open operations were not a great success agreed with his own, and from what he had seen and read himself he thought there was much more promise in a conservative non-operative procedure, that is to say, manipulative treatment alone, and strictly conservative measures. His experience, based on dissections, was not quite that of Mr. Templeton, as he had found a very good head to the femur at birth, with a poor acetabulum,

but yet an acetabulum which was capable of receiving about half as much of the head of the femur as it should receive. It was important to collect as much evidence as possible as to the condition of the acetabulum and of the head of the femur at birth. His own specimens, which he had shown to Dr. Calot, a well-known surgeon in France, corresponded with that gentleman's experience, that is to say, there was a promising rudiment to work upon.

Multiple Exostosis.

Mr. TEMPLETON showed, for Mr. Mayo Collier, a case of multiple exostosis in a man aged 36, by trade a French polisher. The patient was unmarried, and had suffered from rickets when a child, and since the age of six lumps had been forming in connection with the bones. He had never yet had any operations performed upon the bones, though one or two of them gave rise to some inconvenience. A very prominent lump was seen at the inner part of the tibia, near the knee, the skin over which owing to the chafing had commenced to ulcerate. Most of the lumps were in connection with the epiphysial junctions. There were outgrowths also at the upper and lower ends of the humeri and on one scapula. The same day Mr. Templeton saw two cases occurring in the same family, one a boy aged nine and the other a girl aged seven. There were six children in the family, but these were the only two affected. The treatment of this condition was very unsatisfactory, and all that could be done was to remove those growths which gave rise to pain, which pain might be caused either by pressure of the growth upon a nerve or by friction from outside. The patient was the only member of his family so affected. There were no exostoses in connection with his ribs.

The Treatment of Excessive Sweating.—

An article on this subject is published by Weber in the 'Journal des Praticiens' of March 11th, 1899. He points out that in certain conditions where there is localised sweating or hyperhydrosis, that it is chiefly a neurotic condition and is to be treated usually by the administration of bromides, antispasmodics, and, more important than all, cold douches, which will improve the nutrition of the nerves and vessels in the part affected. Of course,

where alcohol, tobacco, cocaine, or similar substances are used to excess, these must be withdrawn.

In the sweating which accompanies general diseases, such as the various fevers, the following treatment may be instituted:

Agaric, 45 grains;
Extract of opium, 7 grains.
Make into 40 pills and take two or three at night.

Or, in other cases, pills of agaracin, in the dose of one tenth to one fourth grain, may be given. In other instances tribasic phosphorate of lime in the dose of one drachm is useful. In still others camphoric acid, in the dose of twenty to forty grains, given in powder, in capsules, in konseal, or dissolved in brandy or whisky. The other remedies which are not to be forgotten in this condition for obstinate cases are ergot, picrotoxin, and sulphonal.

Locally lotions of tannin one per cent., alum ten per cent., may be applied, or a powder may be put up for internal use as follows:

Pulverised talc, 3 ounces;
Salicylic acid, 20 grains.

Local sweating of the feet or hands may be controlled by applying three times a day the following formula:

Borax, ½ ounce;
Salicylic acid, ½ ounce;
Boric acid, 1 drachm;
Glycerin,
Dilute alcohol, of each 2 ounces.

In cases of fœtid sweating of the feet the following may be used:

Pulverised talc,
Subnitrate of bismuth, of each 1½ ounces;
Permanganate of potassium, ¼ grain;
Salicylate of sodium, 30 grains.
Apply over the feet and dust between the toes.

Or,

Powdered alum, 45 parts;
Salicylic acid, 5 parts.

It is hardly necessary to add that in the profuse sweating which occurs at the crisis in such diseases as pneumonia we should abstain from interfering with it. Only when the sweating becomes more or less chronic should it be arrested.—*Therapeutic Gazette*, August, 1899.

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NOTICE.

CHAPTERS FROM THE TEACHING OF DR. FREDERICK ROBERTS.

ON SKILLED CLINICAL EXAMINATION.

OBJECTS AND PLAN OF STUDY.

IT will be at once obvious that before examination of the chest or abdomen can serve any useful clinical purpose, it must be studied and habitually practised upon some definite system or plan. It is only thus that the ability can be acquired for carrying it out, in the routine of practice, in any-thing like an intelligent and methodical manner, or of deriving from it any reliable information. The investigation will have to be conducted on a more or less minute and elaborate scale in different cases, according to circumstances. It is often impossible to tell beforehand what kind of case we have to deal with, but even when the conditions are simple and easily recognised, an un-systematic and objectless examination is likely to lead either to no positive result or to frequent mistakes; while, should they happen to be slight or obscure, or numerous and complicated, they are almost certain to be overlooked or misunderstood.

In dealing with the subject, in the course of clinical instruction, it has been my custom to follow what I may term a progressive plan, in which skilled examination is regarded from different points of view, and the student is taught from first or elementary principles upwards, whereby ultimately a fairly complete and comprehensive grasp of its chief details and difficulties is ob-tained, which at any rate will afford an intelligible basis on which to found the results of future experience. I propose to give here an outline of this plan, which I venture to submit as one of practical utility for training students, so that they may become competent to carry out the examination of the thorax or abdomen in a rational and methodical manner; to recognise the phenomena

which are thus revealed; and to rightly interpret their significance in particular cases. The following remarks apply to both these regions.

1. The first step is to acquire a systematic knowledge of the *methods of examination* employed, and to become as proficient as possible in their practical application. With regard to those ordinarily included under " physical examination " (especially inspection, palpation, percussion, and auscultation), having learnt generally what they severally signify, each method should then be studied individually, with the view : (*a*) of becoming thoroughly familiar with the ways in which it is carried out; (*b*) of definitely understanding the purposes or objects for which it is used. The examination of the several secretions or excretions, as well as of morbid discharges or other materials, is in each case conducted upon some recognised plan, with which it is also necessary to be acquainted, but the previous training in the chemical and physiological laboratories, during the preliminary period of the medical curriculum, ought to make the clinical study of this part of the subject comparatively easy. Special modes of investigation, only employed under exceptional circumstances, or for particular purposes, should, of course, receive due attention ; and in the use of various kinds of instruments, particularly of elaborate apparatus, much individual training is demanded, before the requisite skill for their practical employment in clinical medicine can be obtained, which, however, in certain instances, may also be previously acquired to some degree in the physiological laboratory.

2. The immediate purpose of employing the methods of examination just alluded to is, as has been already intimated, to observe or bring out various *objective phenomena* which reveal abnormal physical or other conditions, often of material or essential service in diagnosis. Some of these phenomena are easily recognised and require but little study. A large number of them, however, which are brought out by ordinary " physical examination," and conveniently expressed by the term *physical signs*, are by no means readily appreciated, and the next step in the process of training is to become practically familiar with each of these signs, without reference to their meaning or their relation to particular conditions or diseases. Undoubtedly with many this is no easy task, and

in any case the ability to recognise most of the signs can only be acquired in anything like an adequate degree by prolonged study and practice. This must be at once evident when it is remembered that the phenomena are realised by the senses of sight, touch, and hearing, which are often naturally obtuse, and under any circumstances require more or less education before they can properly appreciate many of the signs which it is the object of physical examination to elicit. Too much attention, therefore, cannot be paid to this matter, and the clinical student should avail himself of every opportunity afforded him for rendering himself familiar with each individual physical sign likely to be met with in the investigation of patients. Some of them are of exceptional occurrence, and these are as a rule so peculiar that, once recognised in a typical form, they are not easily forgotten.

3. Having fairly mastered the methods of examination, and the signs they reveal, the subject may now be intelligently studied in relation to the *conditions* of which these signs are the outcome and manifestation, and particularly with reference to *physical conditions* of different kinds. In the first instance it is most desirable to obtain some comprehensive idea of the chief conditions, normal and abnormal, which it is our object to make out by the several modes of investigation, in connection with the thorax and abdomen respectively, and in relation to their individual contents. They can be definitely arranged, and in future communications an attempt will be made to present a concise summary of the deviations from the normal which may be met with, upon which the study of signs in relation thereto may be founded. This study should then be carried out from two points of view :—(1) each sign must be taken individually—such as " dulness on percussion "—and the conditions with which it may be associated thoroughly understood and learnt, so that when it is noted in any case, its possible causes may be at once called to remembrance; (2) it is highly important to study the several abnormal conditions separately, so as to become quite familiar with the group or combination of signs by which each is revealed. For instance, a collection of fluid in the pleural cavity, or consolidation of the lung, are indicated respectively by a set of signs, usually very definite and distinctive, but presenting certain

variations under particular circumstances. Obviously a methodical and practical acquaintance with the signs which characterise any such morbid change is of the utmost consequence in the clinical investigation of any case in which it happens to be present, and it is not only necessary to be able to recognise them in their typical form, but also to be prepared for the possible variations just alluded to, which are, as a rule, fairly well understood. .Undoubtedly these variations are not always appreciated as they ought to be, and hence, if the signs are not entirely characteristic, they do not convey the definite information or meaning to the observer which they should do, important conditions being thus liable to be overlooked or misinterpreted.

In relation to this part of the subject, attention may be called to the obvious fact that in health certain conditions exist in the chest and abdomen respectively, which are revealed by what may be termed *normal physical signs*. Clearly these ought to be thoroughly mastered before any deviations from the healthy state can be investigated in a satisfactory manner, but it is too common a practice to ignore altogether this preliminary study, and thus physical examination loses much of its value for clinical purposes, and may even lead to many errors in diagnosis, from an inability to compare the abnormal with the normal.

4. In the preceding remarks skilled examination has been dealt with from a general and comprehensive aspect, and without any immediate reference to particular structures. In carrying it out, however, we have in a large proportion of cases to apply it to *individual organs* or *systems*, and it is most desirable to study the subject specially from this standpoint, and to be always prepared in practice to investigate each of the more important organs or systems in a methodical manner, when occasion requires. While recognising the mutual effects which different structures have upon each other, and the modification of signs thus produced, it is very confusing to mix up the examination, for instance, of the lungs and heart, in the clinical description of a case, and this applies with still more force to the abdomen, which contains so many viscera. At this stage, therefore, the clinical student may advantageously direct his attention more particularly to the several organs and systems, and learn with regard to each :—

(1) The course of procedure and methods to be adopted in its examination, noting any modifications of ordinary methods, as well as those of a special kind.

(2) The nature of the signs to be investigated, which should be taken in a definite order.

(3) The normal and abnormal conditions of the structures under examination, physical or other.

(4) The more characteristic signs of each of these conditions.

5. When the several stages thus far considered have been gone through, and sufficiently mastered, then, and not until then, can skilled examination be studied in an intelligent and satisfactory manner in relation to recognised *diseases* of various kinds. To start, for example, by merely learning the physical signs of individual complaints, to which we give distinctive names, is entirely wrong in principle, and only results in waste of time and labour, for at the best the knowledge thus gained can only be superficial, hazy, and indefinite, and has no scientific basis to rest upon ; while, should the expected signs be not well marked in any particular instance, grave errors in diagnosis are very liable to be made. In dealing with each so-called " disease," the first object should be to try to understand clearly what structure or structures are affected in its course, and what physical or other changes are likely to occur, which can be detected by skilled examination. It must be borne in mind that the conditions vary in their exact nature and degree in different cases of the same disease, it may be considerably, and are often more or less complex; while in many complaints they change materially during the progress of a case, not uncommonly running a definite course. When these facts are adequately comprehended in relation to any particular complaint, the course of investigation required can then be intelligently grasped and readily carried out, while the meaning of the signs elicited may be interpreted without any difficulty. It must again be insisted upon in this connection that, in dealing with individual diseases, any phenomena brought out by different kinds of skilled examination, as a rule, merely constitute one set of factors in the diagnosis, and must only be taken for what they are worth.

6. The examination of more or less *complicated cases* is the final stage in the process of clinical

training, and often affords ample scope for the exercise of personal powers of observation and practical skill. Such cases are of very common occurrence, and this fact cannot be too often enforced. At present it must suffice to mention as illustrations that an organ is often the seat of two or more diseases; that different structures in the chest or abdomen are frequently affected at the same time; and that it is by no means uncommon to find the contents of both these regions simultaneously involved in various ways and degrees. In some instances the existing conditions are so numerous and complicated, that it requires considerable clinical experience and skill to unravel them, and only those who have systematically and patiently worked through the steps of clinical instruction previously indicated, can have any reasonable expectation of being able to arrive at anything like a reliable or definite diagnosis in cases of this kind.

Having sketched the plan according to which skilled examination may be systematically studied with advantage, there still remain certain points bearing upon this part of the subject to which it is desirable to call attention.

It is obvious that each branch of what may be termed " special clinical examination " demands for its application personal knowledge and skill of a particular kind. Consequently it is essential, before it can be of any real service, that it should be adequately studied in all its relationships. I venture to affirm that the superficial and cursory manner in which examination of the chest and abdomen is often practised is worse than useless, and really leads to more harm than good. And for this there is at the present day no excuse, seeing that classes for systematic training in such examination constitute an important and recognised part of the medical curriculum, and any student of average intelligence and ability can, if he chooses to use his opportunities, acquire knowledge and skill quite sufficient for all practical purposes. It must be understood, however, that effort is necessary, and that only by patient industry and perseverance can any one reasonably expect to become proficient in carrying out even the simpler methods of diagnosis required in ordinary practice. As already intimated, there are certain exceptional methods which demand special instruction and training, but these are only employed under par-

ticular circumstances, and are therefore really of much less consequence for the practitioner, their supposed value being, indeed, in some instances decidedly exaggerated.

When entering upon the study of skilled examination, as applied to the thorax or abdomen, it is certainly desirable to obtain, in the first instance, a fair acquaintance with the theory or science of the subject, as derived from books and from oral instruction. Much useful information may be thus gained with regard to the methods of investigation, the purposes or objects for which they are employed, the signs to be noted, the terms applied to them, and various other matters. At the same time it is necessary to guard against being too theoretical, and to avoid entering into the discussion of deep and abstruse questions relating to acoustics or other scientific subjects, which the majority of persons cannot appreciate or understand, and which only puzzle and confuse, making the study of physical examination appear much more difficult than it really is. As regards acoustics, a knowledge of certain elementary and simple principles and facts is sufficient for all practical purposes. With respect to the use of terms in relation to physical signs, it cannot be too strongly insisted upon that some definite meaning ought to be associated with each recognised term. They are often employed in such a vague and loose fashion, that they convey no reliable information, and only lead to confusion and uncertainty in diagnosis. It must be granted that the nomenclature of physical signs presents considerable difficulty, on account of the want of agreement amongst writers and physicians on this point. Some are so wishful to simplify the subject that they include under one term signs which are essentially different; others multiply terms indefinitely, a tendency certainly to be strongly deprecated. Unfortunately, also, the same word has not always the same significance with different authorities. Notwithstanding these difficulties, however, there unquestionably ought to be less confusion and indefiniteness on this matter than exists at present, and the clinical student should at any rate personally aim at connecting some actual meaning with the terms he learns to use.

There is another point to be noted bearing upon the theoretical aspect of physical examination. It is a well-known and positive fact that certain signs

are associated with particular conditions. The explanation of the relationship, however, is often a debatable question, and many views may be held on the matter, which are not uncommonly discussed at considerable length. Under such circumstances it is most important to recognise the *fact*, and not to pay too much attention to the *theories*, which, as a rule, have no practical bearing.

While duly recognising the advantages of theoretical study, it cannot be too strongly enforced that only after patient and prolonged practical instruction and training can anything approaching proficiency in physical and other methods of skilled examination be attained. Much may be done in this direction by clinical demonstration, but the student should fully understand that the training must be mainly personal, and he cannot rely simply upon the teaching of others, except so far as this serves to direct and help him in systematising the facts which he has to learn; in making him familiar with the practical application of the several methods of investigation, and the course to be pursued under various circumstances; and in drawing his attention to individual signs, or to a group of signs indicating a particular condition, as exemplified in typical cases. What he has himself to aim at is to acquire a due intellectual comprehension of the subject in its several relations, along with adequate skill; to be thorough, without being extreme, thus learning to employ physical and other methods of examination in a rational manner, and within reasonable limits; to appreciate and interpret with certainty and positiveness the signs thus revealed, even when slight, but at the same time not to be led away by or exaggerate the importance of those which are of little or no consequence. These results cannot be achieved except by long-continued personal study, directed to the several points indicated in the plan already sketched. Even for the mere performance of the simpler methods of examination in common use much practice is needed; while those of a more elaborate kind, necessitating not uncommonly the employment of delicate or intricate instruments, obviously demand more special study. Some of these are, indeed, beyond the limits of ordinary clinical investigation, and if practised at all require the aid of skilled specialists of different kinds, or experts in chemical analysis or other scientific departments. But, further, the

ability to recognise many of the ordinary physical signs can only be acquired after considerable practice, and more especially to distinguish between those which more or less resemble each other; while the relation between these signs and morbid conditions, individually and collectively, can only be adequately learnt by prolonged experience. Taking a broad view, what the clinical student has to aim at is to become so familiar practically with the methods of examination and what they reveal and teach, that the process can be gone through almost instinctively, without undue mental effort or strain upon the attention, and that at the same time the phenomena thus disclosed may be realised with equal readiness and ease.

One main object to be kept in view in connection with physical examination is the education and training of the senses of sight, touch, and hearing, which is absolutely essential for every person who desires to become proficient in this branch. There are marked individual differences, however, in the natural acuteness of the several senses, as well as in the capacity for performing the various acts which physical examination involves, so that some require far more training than others. Each student should therefore try to realise his own peculiar difficulties, and make every effort to overcome them, by persistent and systematic practice in those directions in which he feels himself deficient. It is only in this way that he can master his difficulties, so as to become competent to carry out skilled clinical investigation satisfactorily, and to recognise with anything like precision what he sees, feels, or hears. It may be remarked in passing that a naturally musical ear, as well as a musical education and training is, in my opinion, a decided help in the study of various sounds to be appreciated in connection with physical examination. I have noticed in some persons an almost absolute inability to distinguish different sounds elicited by percussion or auscultation. At the same time there are others who are not, in the ordinary sense of the term, "musical," but who, nevertheless, have a keenly musical ear for the appreciation of such sounds.

It is not only in the general study of physical examination that practice is needed, but also in dealing with particular abnormal conditions, indi-

vidual diseases, and more or less complicated cases. Obviously the ability to investigate and understand cases presenting various aspects will depend greatly upon the amount of practical experience enjoyed by the investigator; but, however well-equipped he may be, he will probably meet with instances in which his knowledge and skill will be taxed to the utmost, before he can fully and intelligently appreciate and understand the signs which he observes or elicits, and the conditions which they reveal.

The plan is not uncommonly adopted of teaching physical signs by artificial aids—either producing conditions supposed to resemble morbid states met with in the chest or abdomen, and then demonstrating the characteristic signs as a whole; or eliciting particular signs in artificial ways, and comparing them with those which are the result of morbid changes. In my opinion such a method of learning the subject should be avoided as much as possible, for the signs thus recognised by no means always correspond with the reality, and it is far preferable to get the first impression of each of them from patients in whom they are actually present. In relation to the great majority of physical signs there need be no difficulty, as illustrative examples are generally within reach in hospital practice; while even cases affording demonstration of the more rare and exceptional phenomena can usually be found, if they are looked for. At any rate, one good typical illustration of a particular sign is of infinitely more value for educational purposes than any amount of description, or any number of artificial imitations of its characters. The special hospitals might be utilised much more than they are for practical study in this direction.

It is worthy of note that a great deal may be learnt about the methods of physical examination from practising on healthy subjects, and, as already intimated, it is necessary to be fully acquainted with the normal signs presented by the thorax and abdomen respectively, remembering, however, that these vary within certain limits, and therefore it is a mistake to have too definite ideas on this point. Moreover, they exhibit recognised differences in males and females respectively, as well as at different periods of life, with which it is also requisite to be familiar. The post-mortem room sometimes affords useful oppor-

tunities of studying certain physical signs presented by morbid changes, when these are of a definite character; and in the dead subject it is possible to produce artificially some of the abnormal conditions met with in living patients, which within due limits may be available for the demonstration of some of the more characteristic physical signs.

There is so much to engage the attention during the period of the medical curriculum that, in the great majority of instances, the clinical student can at the best do little more than lay a good foundation for subsequent progress in the practical application of skilled examination for diagnostic purposes. However well he may think he has mastered the subject, experience will soon teach him that he has much to learn when he enters upon the active duties of his profession, and, further, that it is only by constant practice that he can even retain the knowledge and skill which he has already acquired. Therefore, merely from the point of view of maintaining and enlarging such knowledge and skill, and becoming more thoroughly proficient as a skilled clinician, it is most important to take advantage of every opportunity for gaining additional experience which offers itself in the course of medical practice, and also, when possible, to study the subject on a wider scale and in a more special manner amongst hospital patients. On this account, as well as having regard to our responsibilities towards patients, the routine employment of skilled examination in ordinary practice may be fairly urged as a duty to be invariably recognised within reasonable limits, the particular course to be adopted depending upon the nature of the case with which we have to deal. Obviously, if symptoms are complained of or noted in connection with an organ or system, such as the respiratory system, heart, liver, or kidneys, it ought to be an imperative rule to examine accordingly, and neglect of this rule cannot be justified under any circumstances. Moreover, remembering the frequency with which organs are the seat of definite, it may be serious, disease, without giving rise to obvious symptoms, a fact already alluded to, it is really never safe to ignore those which are of vital consequence, and the examination of the chest and its contents, the arteries, and the urine may be strongly recommended as a part of the

clinical investigation of every case when first seen, at any rate if there should be any doubt or obscurity as to the diagnosis. The necessity of more or less frequent examination of the thorax in the course of many fevers and other acute diseases, for the purpose of detecting complications not revealed by symptoms, is another important fact to which attention may be drawn in the present connection, and one which is not adequately recognised. As regards the skilled clinical examination of the abdomen, it must never be neglected when circumstances seem to require it, but the exact course of procedure called for must necessarily differ considerably in different cases. There should be no hesitation or delay in having recourse to either of the more special and exceptional modes of investigation now in vogue, when there seems a reasonable necessity for its employment, whether in relation to the chest or abdomen ; but they ought never to be practised for mere show, or as a matter of routine, when obviously not required for diagnostic purposes.

Black Tongue.—William S. Gottheil reports a case of this disorder in a healthy, well-nourished child two years of age. The centre of the dorsum of the tongue was occupied by a dark greenish-black streak, commencing abruptly in front of the circumvallate papillæ and extending down almost to the tip. It was three quarters of an inch wide posteriorly, narrowing gradually towards the anterior portion of the organ. The black streak was slightly elevated, its surface looked gelatinous, and it ended in a rather abrupt margin on either side. There was no apparent papillary hypertrophy, none of the thread-like excrescences which have been noted in many of the recorded cases. Most of the discoloration could be removed by a vigorous scraping. An immediate microscopic examination of the scrapings showed, in addition to normal epithelial cells and detritus, small, round, spore-like bodies. So abundant were these peculiar structures that a light scraping consisted of them almost entirely. They appeared as large, irregularly oval, semi-transparent bodies, showing a faint grey colour under the lens. There were no pigmented granules in them or the surrounding fluid. They were unconnected with each other, were not arranged in series, and there was no mycelium. Some of the oval bodies showed hemispherical projections (buds), but none of them showed cells in active proliferation. The discoloration was removed in about a week by the use of a mouth-wash consisting of a saturated solution of hyposulphite of soda.—*American Journal of Obstetrics*, July, 1899.

TWO CLINICAL LECTURES

ON

THE DIFFERENTIAL DIAGNOSIS OF SCROTAL SWELLINGS.

LECTURE I.

Delivered in the Post-Graduate College, West London Hospital, July 13th, 1899,

By W. McADAM ECCLES, M.S., F.R.C.S.,

Assistant Surgeon to the Hospital, and to the City of London Truss Society.

GENTLEMEN,—I desire this afternoon to present to you several cases illustrative of the diagnosis of scrotal swellings, and I have ventured to think that such a demonstration will not be devoid of interest, seeing that tumours of the scrotum are common and are widely different in their characteristics. There is consequently much diversity in the methods which have to be employed in the diagnosis and subsequent treatment. We are only concerned this afternoon with the diagnosis of these enlargements of the scrotum.

Scrotal swellings, for the purpose of diagnosis, fall conveniently under two headings—the reducible and the irreducible. A third division might with some interest be employed, perhaps, namely, tumours that are partly reducible. Some objection may be urged against the dual division, arising from the fact that the terms reducible and irreducible are not, strictly speaking, applicable to certain scrotal swellings, as we shall see, and also because a swelling which is, in the hands of one surgeon, at one time irreducible, may be reducible when dealt with by another surgeon at a subsequent period. In fact, we may take it that the term " irreducible," when applied to many swellings in the scrotum, often indicates a merely temporary clinical condition. Indeed the use of these words can only be allowed in a general sense, and must not be pressed too far. A tumour of the scrotum which is reducible may be so either spontaneously or only after some manipulations on the part of the sufferer or his surgeon. Care must be taken therefore in order to definitely determine the reducibility or irreducibility of a swelling situate in the scrotum. And, as I have

already indicated, it is by no means infrequent to find that one part of a scrotal tumour may be reducible while another portion of it may be irreducible. However, it is convenient for the sake of this demonstration to adhere to the classification of scrotal swellings into reducible and irreducible.

I propose this afternoon to review the diagnosis of reducible scrotal swellings, and to leave irreducible swellings to the next demonstration.

The reducible scrotal swellings are four in number—reducible scrotal hernia, varicocele, congenital hydrocele, and what I venture to term ascitic hydrocele, a form of reducible scrotal swelling which is not often alluded to in the usual text-books. Although in the majority of instances it is in reality a reducible hydrocele of the hernial sac, yet in others it is possibly a congenital hydrocele arising from peculiar circumstances. I shall allude to this matter again presently.

In these reducible scrotal swellings, the one fact which is common to them all is that the swelling disappears either spontaneously or on manipulation when the patient assumes the horizontal position. The manner of their reduction is a very important point in their differential diagnosis. The fluid collected in the veins of a varicocele can hardly be said to be "reduced," for the blood has never really passed down into the veins from that portion within the interior of the abdomen, but has rather flowed up into them from the spermatic arteries and capillaries within the scrotum. Therefore, strictly speaking, a varicocele is not a reducible swelling. This is one of the reasons that have been urged against the classification into reducible and irreducible. When the patient lies down, the venous blood passes naturally, silently, and imperceptibly, into that portion of the spermatic veins which is found within the abdomen. Here is a patient whom I have not myself yet seen, but Mr. Kemp, my house-surgeon, obtained him to illustrate some of my points. In this man you will observe, even from a distance, that the left side of the scrotum hangs lower than the right side, and I think you can also see from where you are sitting that there is a considerable tortuosity of the veins in the scrotum, the veins showing through the skin. Moreover, if you look at it you will notice that the bulk of the swelling is in the lower part of the

scrotum, but that it does extend somewhat into the upper region, though it is altogether absent from the inguinal canal, a point of distinction between it and a hernia passing down into the scrotum. I will now ask the patient to lie down, so that you can see the change which takes place when the patient assumes the horizontal position. As he lies down you will notice that a great deal of that tortuosity which appeared over the scrotum has disappeared, and if I take hold of the bottom of the scrotum and lift it up, practically the whole of the tortuosity and swelling has entirely gone. In other words, the blood which was in the veins of the varicocele has not been reduced into the abdomen, but has flowed on into that portion of the veins which lies within the abdomen. When the patient stands up again the former amount of swelling is reproduced.

Unfortunately I am unable to bring before you a case of congenital hydrocele this afternoon, but I will mention a point in connection with its reduction. In congenital hydrocele, as a rule, the opening which forms the communication with the general cavity of the peritoneum is but small, with the result that the fluid in the processus vaginalis returns but slowly. This reduction is not usually spontaneous when the child is laid flat on his back, the fluid does not return into the abdominal cavity until after somewhat prolonged pressure has been exerted on the scrotal swelling. I have seen many cases of congenital hydrocele in which a pressure of ten to fifteen minutes was required to get all the fluid in the scrotum reduced.

In ascitic hydrocele, on the other hand, the aperture leading into the abdomen is generally of considerable size, and unless the abdominal cavity is so filled with fluid as to be incapable of containing more, that within the scrotum will pass back either spontaneously when the scrotum is raised, or on pressure of the sac. I may mention that an ascitic hydrocele is usually present in a patient who has had hernia and who has developed ascites, and forms a class of case in which it is almost, if not completely, impossible to keep any viscera which tends to descend into the sac, within the abdomen. They are extremely difficult cases to deal with.

We now come to the commonest form of reducible swelling in the scrotum. In a reducible hernia, reduction is most characteristic. When

the patient lies flat, or with the buttocks somewhat raised, in some instances the whole of the contents of the sac will disappear into the abdomen. In others, moderate taxis gives rise to reduction, and it is then that the almost conclusive sign, as of a solid body slipping away from the fingers, occurs, often with a gurgle when intestine is present. The reduction, moreover, is sudden at the end, and may be complete or incomplete. In other cases it may need a very considerable degree of force in taxis to bring about reduction. I have here a patient who has a very large swelling of the scrotum on the right side. The left side of the scrotum is absolutely undistended, except by the testis hanging there quite free. On the right side you will notice the tumour runs up into the inguinal region, an important point in connection with the diagnosis of a hernial swelling. Also, I should like you to observe that the surface of the swelling is more or less smooth. There are a few dilated veins on the surface, but, taking it as a whole, the swelling is smooth and uniform. The patient will now lie down, and you will see that this is a case where the swelling does not become reduced spontaneously, neither does the swelling reduce itself when I lift the scrotum up. But by applying gentle taxis with the left hand over the canal, and with the right hand grasping the tumour, the whole of the swelling disappears, and at the last there is a sudden slip back of what you can feel between your fingers is a solid substance; it is altogether unlike fluid going back. Now, when the patient coughs, even though he is lying down, the tumour comes back again.

Let us just review the four points in connection with reduction. A varicocele goes back, if we may use the term "goes back" in this connection, silently and imperceptibly, without the feeling of any solid body slipping away from the finger, it goes back spontaneously. Congenital hydrocele is not reducible spontaneously in the majority of cases, but requires a certain amount of pressure—and that generally extending over some considerable time—to reduce it. Ascitic hydrocele, provided the fluid in the abdomen is not so great in amount as to prevent any more entering the abdomen, goes back, as it were, with a gulp when the patient lies down and the scrotum is held up, because the opening is large and the contents are fluid. A reducible hernia may be spontaneously

reducible, but perhaps more usually is reduced by taxis, and there is the almost conclusive sign of a solid body slipping away from the fingers, with the reduction sudden at the finish.

The contents of the scrotal swelling having been reduced, the patient still being in the horizontal position, some important facts may be gathered if certain manipulations are carried out, and then the person be requested to rise from the recumbent posture. Let us observe in this man what happens. When the hernia is reduced we will place the finger over the site of the inguinal canal (this man has unusually large rings) and get the patient to rise from the couch. You will notice that the bulk of the swelling does not reappear while my finger is over the canal, proving that the swelling comes down from above. Immediately I remove my finger from that position the viscera slip down again. That is a very important sign of hernia. We will now have our first patient back, and if I treat him in the same way and get him to stand up while my finger is over the canal, his swelling reappears in spite of the pressure that I exert. In other words, I am not pressing sufficiently to prevent the entrance of blood into the scrotum by the spermatic arteries, therefore the veins which are supplied by these arteries refill. This again, is an important point in the diagnosis between a reducible swelling of the nature of a varicocele and a reducible swelling of the nature of a hernia. If you watch a congenital hydrocele you will see that there is a considerable delay before the fluid refills the sac. But in an ascitic hydrocele the scrotal swelling reappears with a rush when the patient assumes the vertical position.

The next point is that of the consistency of these swellings. In the majority of cases, a reducible hernia is elastic, but it may vary in elasticity in different parts. This variation is due to the different viscera which may be in the sac. If it is an enterocele (containing intestine only) the elasticity of the swelling is very marked indeed. If the sac contain omentum only, the elasticity is very much less marked, in fact, the swelling is almost doughy in character. But in the majority of cases the swelling in the scrotum, which is of a hernial nature, may be said to be "impressionable," that is to say, you can easily make an impression upon it by pressure with your

finger, but when this is withdrawn, it resumes the shape and character it had before.

Here is our second case with the hernial swelling. You will notice I can make an impression upon that, in fact I can make my finger and thumb meet through it, but directly I take my finger off the impression is lost. This is very characteristic of hernia. In congenital hydrocele you cannot make such an impression upon it. On the other hand, varicocele feels, as the text-books say, like a bag of worms, and that is a very characteristic feel. You can determine with your fingers more or less the separate veins lying side by side and moving on one another, just as if it were earth worms enclosed in a bag. In ascitic hydrocele there is generally a very tense swelling, upon which an impression may be made, but not so easily as in enterocele.

Another very important point in the question of diagnosis of reducible scrotal swellings is that of an impulse on coughing. There are two chief varieties of impulse on coughing, which are not, I think, sufficiently clearly distinguished, as a rule, from one another. First there is the "forward" impulse, which you feel on every abdominal wall, whether there by an external swelling or not,— a forward impulse due to the downward movement of the diaphragm which pushes the whole of the abdominal contents outward or forward. It is of course present in any scrotal swelling which communicates with the abdomen. In addition to this there is another and very important form of impulse which is the "expansile" impulse, where, when the patient coughs or the child cries, a swelling connected with the abdomen becomes enlarged or expanded. Here is a typical instance of this. When you have a hernia to deal with you will find that the expansile impulse is due to two causes; first, because more visceral contents from the abdomen come down into the sac, and, secondly, if the sac contains intestine, more intestinal contents pass into that portion of the gut which lies in the sac. This, I think, we may call the hernial expansile impulse. In the case of a varicocele there is also an expansile impulse, but of a totally different character to that of the hernia. Unfortunately, this patient does not give the characteristic that one wants; he has got an expansile impulse, but he has not got what a varicocele commonly has, namely, a fluid thrill.

The same occurs when you have a dilated saphena vein in the upper part of the thigh; there you have an expansile impulse, with a marked thrill that may be felt sometimes well down the thigh. This, I think, one may call the impulse of dilated veins, quite distinct from the impulse of hernia.

Then in the case of congenital hydrocele, although there is a communication with the abdomen, this communication is so small that you feel very little, if any, expansile impulse. In the ascitic hydrocele the expansile impulse is very considerable indeed, owing to the aperture leading into the abdomen being of considerable size.

I now pass to another interesting point in connection with diagnosis which is also by no means frequently spoken of, and that is the weight of these swellings. Of course, one has to take these weights and regard them in proportion to the size of the swelling, but if you get a man to stand in front of you and take the scrotal swelling into the palm of your hand, you will find that its weight will perhaps be different to that of another scrotal swelling of the same size. Of two swellings of the same size, that of a hernia is considerably lighter than a hydrocele, obviously because air is lighter than water, the intestine containing gas and hydrocele containing fluid. That point I shall have to allude to again in treating of irreducible scrotal swellings.

I now want to touch upon the question of translucency. Here we meet with some difficulties. Taking the four reducible swellings of the scrotum, hernia is by no means always non-translucent, indeed you may take it that, as a rule, hernia in an infant is translucent. Therefore as a point in diagnosis between hernia and congenital hydrocele translucency is of very little use. Again, there are certain swellings in the adult which are not translucent, but which are not hernia, so that here again the question of translucency does not help us very much. Moreover, one part of the swelling may be translucent, but not another, and I hope to demonstrate that presently. I have here a small child who has a well-marked scrotal hernia, and you will see that the sac is translucent. In the majority of these cases in children you can get perfect translucency if there is not very turbid intestinal contents. Therefore every translucent swelling in a child is not necessarily hydrocele. Now, in determining

whether a swelling is translucent or not, one has to be careful to get a sufficiently strong light.

I have here a patient who has scrotal swelling, one portion of which, as you can see, is hernial and non-translucent and the other hydrocele and translucent. When you have hernia and hydrocele together, which is by no means infrequent, it is a little difficult to be sure that you have reduced all the hernial portion unless you determine it by its response to the test of translucency.

There are two other ways of examining reducible scrotal swellings. I refer to percussion and auscultation. Here is a large scrotal swelling which we will test by percussion. I will in turn percuss the thigh, the abdomen, and the scrotal swelling, and you will notice that three distinct notes are produced. There is a dull note on the thigh, a resonant note on the abdomen, and a higher pitched partly resonant note on the swelling.

Then as to auscultation. In many cases we gain impressions by listening to scrotal swellings which we do not gain by percussion. In hydrocele we hear nothing, but in hernia we may hear gurgling.

I have now dealt with the diagnosis of these four swellings from one another. Of course, there is also a large field, which we have not time to enter upon, as to the diagnosis of these swellings from other similar swellings in the adjacent region. Here is a man who a few days ago was an instance of diagnosis between a reducible scrotal swelling, in the form of a scrotal hernia, and a femoral hernia. The ordinary statement in the text-books as to diagnosis between a scrotal hernia and a femoral hernia is that scrotal (or labial hernia) is within the spine of the os pubis, while femoral hernia lies external to that spine. That is perfectly true, but the diagnosis between a scrotal hernia and a femoral hernia is one of comparative ease. The difficulty, especially in a woman, is the diagnosis between incomplete inguinal hernia and femoral hernia, both of which, you remember, if you review the anatomy, lie external to the pubic spine. This fact, I think, is not given sufficient prominence to in the text-books. Here is a man presenting somewhat the feature I allude to in this connection. He has a femoral hernia, and yet one that might be mistaken at first sight for an inguinal protrusion. It

appears almost in the upper part of the scrotal region, and, seeing that femoral herniæ in men are not so common as in women, this is a case where the diagnosis may not be made correctly, in fact it was not made correctly in this case. The bulk of the swelling lies at a lower level than Poupart's ligament. That is the first point in the process of diagnosis. Of course, in certain cases, femoral herniæ mount up in front of Poupart's ligament, and so get into the inguinal region, but a large number of them pass downwards into the thigh.

The second point is the direction of reduction. An inguinal hernia is reduced upwards, outwards, and backwards. On the other hand, a femoral hernia, especially one which comes to lie in front of Poupart's ligament, is reduced downwards, backwards, and upwards. In this case the direction of reduction is probably the best guide. If I put my finger over the region of the inguinal canal and instruct the patient to cough, the hernia naturally still descends.

In the second lecture I propose to review the diagnosis of irreducible scrotal swellings.

Subcortical Cerebral Abscess without External Lesion.—Hirtz reports in 'La Presse Médicale' of June 24th, 1899, the case of a young man who on January 16th received several blows from a club upon the head. He was transported to the hospital, having completely lost consciousness. The following morning he was still torpid, but continued to improve for the next ten days, and was then discharged recovered. On the 17th of the next month he was taken with an attack of Jacksonian epilepsy on the right side, and on the 25th he was readmitted with complete paralysis of the right arm. On March 1st trephining was done over the upper part of the Rolandic fissure. Puncture followed by incision showed a subcortical abscess, which was evacuated and drained. At the beginning of June the patient had recovered complete motion in the paralysed arm. The direct examination of the abscess showed a few rod-like bodies, which were decolorised by Gram's method, and on which attempts at cultivation and inoculation were negative. (The case is one of special interest, as the number which have been so far reported in which there was no lesion of the skin or of the skull are inconsiderable.)—*Medicine,* August, 1899.

ON THE PATHOLOGY OF ACUTE CHOREA.*

BY

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THIS communication is based upon a fatal case of acute chorea which I have lately had an opportunity of examining.

The case was that of a girl, aged fifteen, who was admitted into the Middlesex Hospital under the care of Dr. Cayley, to whom I am indebted for permission to make use of the clinical notes.

There was nothing of much importance in the family or previous history of the patient. The eldest sister (aged twenty-seven) had had rheumatic fever, but beyond this there was no family history either of rheumatism or of nervous diseases.

There was no definite exciting cause to which the disease could be attributed; the patient had left school for twelve months and was leading a quiet uneventful life. Menstruation had not yet commenced; it was thought by the patient's friends that it was about to do so, and to this cause they attributed the origin of the attack. There was no history whatever of any previous chorea.

Involuntary movements of the arms were first noticed on April 6th; these gradually got worse, and by the end of a fortnight the whole body was affected, and it became almost impossible to get the patient to take any food.

It was in this condition that she was admitted to the Middlesex Hospital on April 20th, 1899. In spite of all treatment the movements increased in violence, and were only relieved for a time by inhalations of chloroform, returning again as badly as ever a few minutes after cessation of the anæsthetic.

Consciousness was preserved, and a fair quantity of nourishment was taken, but on April 22nd obstinate vomiting set in, and towards the end of

* Read at the Pathological Section of the British Medical Association at Portsmouth.

the day the patient appeared very exhausted, the movements got somewhat less violent, and death took place quite early on the morning of April 23rd. The temperature, which was 100° on admission, rose as high as 104°, and was 103° at the time of death.

The post-mortem examination showed considerable hyperæmia of the brain and cord, and a few minute hæmorrhages into the white matter of the brain; beyond this there were no abnormalities visible to the naked eye, and there was no excess of fluid in the ventricles.

The heart was slightly enlarged, the aortic and mitral valves were reddened and swollen, and there were some minute nodular swellings on them, the whole condition having the appearance of a recent and acute inflammation of the endocardium. There was no obvious naked-eye change in the appearance of the heart muscle.

Mr. A. G. R. Foulerton kindly attempted to obtain a culture from the inflamed valves, and also examined teased-out stained pieces of the valve for bacteria, but the result in each case was entirely negative, as also had been the attempt to obtain micro-organisms from the blood during life.

The brain was examined microscopically by the following different methods:

(1) The fresh nerve-cells from the cerebral cortex were stained with methyl blue and mounted in Farrant's solution without being subjected to any hardening processes.

(2) The same method of staining was employed after the tissues had been hardened in formalin.

(3) Sections of the cortex were examined by the nitrate of silver stain both by the ordinary method and the modification introduced by Berkeley, which consists of aiding the precipitation of the silver salt by the addition of phosphomolybdic acid.

(4) Pieces of the cortex and medulla were embedded in celloidin and stained with logwood and with logwood and eosin. Sections of the spinal cord were also examined. Stained with methyl blue, many of the pyramidal cells of the motor region showed a slight loss of chromatophile substance at their periphery, and some of the cells were swollen and altered in shape. The nuclei and nucleoli appeared normal.

With the silver nitrate method some irregular varicosities were seen on some of the dendrons,

but these I thought were probably artificial, and it did not seem justifiable to draw any conclusions from them.

There were no changes found in the motor-cells of the spinal cord.

The other tissues of the body examined were the heart muscle and the kidneys. In view of the recent observations which have been made by Dr. Mott* on patients dying from prolonged epileptiform convulsions in whom he found extensive fatty degeneration of many organs of the body, including the heart and kidneys, I carefully stained sections with osmic acid, but could find no evidence whatever of any fatty change.

Dr. Mott considered that the acute fatty degeneration in his cases was very likely due to the accumulation of fatigue products in the blood, and although even the more violent movements of chorea can scarcely be compared in intensity to those of repeated epileptiform seizures, still, in this case the movements had continued for so long, with such violence, and with such evident exhaustion to the patient, that it seemed reasonable to suppose that fatigue products, whatever their exact nature may be, might have collected in the system, but whether this was so or not there was no fatty degeneration in this case either in the heart or kidneys. The heart muscle, however, was by no means normal, and had evidently been deeply affected, probably by the same cause that gave rise to the changes in the endocardium. Microscopically the muscle had a blurred appearance, its outline in many parts was indistinct and the transverse striæ in some areas were much faded, while a longitudinal striation was visible in their stead. The nuclei stained badly, and the muscle itself stained very unevenly, some parts scarcely taking the stain at all.

Time will not now permit any lengthy discussion of the various theories held regarding the nature of chorea, and I shall, therefore, briefly review the results obtained in this case and point out the relations which they seem to bear on the views which are generally held.

A careful examination of brain sections, which has been embedded in celloidin and stained with logwood and with logwood and eosin, failed to show any signs of thrombosis or embolism; and,

* *Vide* 'Brain,' Winter No., 1898.

indeed, when these are present, most people will, I think, now agree that they must be regarded as an effect and not as the cause of the disease, for while they are by no means constant in chorea they do not produce choreiform symptoms in the many other cases where they undoubtedly are present. So also the hyperæmia must be regarded as an accompaniment and not as a cause. No changes were observed in the vessel walls.

It is now generally held that chorea is due to the presence in the blood of some definite toxic substance, and the widespread affection in this case involving endocardium, myocardium, and cerebrum, is in favour of this view, but with regard to the origin of such a toxin there is much difference of opinion.

There are many who uphold the theory that the disease is due to the presence of micro-organisms, and various cocci have been found and suggested as the cause.

The well-established clinical relations which exist between chorea and rheumatism are to a great extent responsible for the micro-organism theory, but it must be remembered that the bacterial origin of rheumatism has still to be conclusively demonstrated, and even when this has been done it by no means follows that because the two diseases are clinically related that they necessarily depend upon the same cause.

There are, however, some strong points in favour of chorea being considered as an infectious disease, the chief of which are summed up by Osler as follows:

(1) Influence of age, sex, and season.

(2) The clinical course of the more severe forms, which resembles a typical infection.

. (3) The almost constant presence of endocarditis, which is in our experience commonly associated with infectious diseases.

·But against this infectious theory there are many objections. The fact that in many cases fright and severe mental shocks undoubtedly act as direct causes, and the extreme differences which are met with in different cases, both as regards the intensity and chronicity of the symptoms, point to some individual rather than to a general cause. As I have already stated, attempts to obtain cultivations in my own case failed, and it does not, therefore, lend any support to the theory of the bacterial origin of the disease. Now, sup-

posing that the disease is due to a toxine which may or may not be of bacterial origin, we have still to explain how the characteristic symptoms are produced.

Physiological and pathological evidence both point to the cortex as the seat of the motor disturbance, but beyond this we are still in the dark, and can only record the lesions which are found, in the hope that some day we may be able to give them some definite significance when more is known concerning the precise seat of origin of nerve impulses, for whether they arise from the cell body or the protoplasmic processes, and what relation the constituents of the cell body bear to them, are at present points which have still to be decided. The particular toxine of this disease must have a very definite effect upon some part of the motor structures to produce such symptoms, but at present the changes that have been described are also found in other diseases, and cannot, therefore, be considered as directly causing the motor symptoms of chorea, although they may very likely participate in them.

Swelling of the cell bodies, which I found to be present to some extent, would appear to be fairly constant, since it was observed by Dr. Charlewood Turner in five cases which are recorded in the 'Transactions of the Pathological Society,' and after making due allowances for the complications of some of the cases and for the effects on the cells produced by many other diseases, Dr. Turner concluded that the "more striking nerve cell lesions were in part due to the nutritive disturbance of the brain which caused the chorea in these patients."

The other condition I observed was a slight amount of chromatolysis at the periphery of some of the cell bodies, and this again, though probably the effect of the toxine, cannot be regarded as a cause of the symptoms since it occurs under many other conditions. The functions of the chromatophile granules being still doubtful, it is obvious that we cannot yet draw any exact conclusions as to the effects of their disappearance; but it may here be incidentally stated that a case of this description, which dies with all the symptoms of nervous exhaustion, and in which after death there is only a very small amount of loss of chromatophile granules, does not support the theory that the function of the chromatophile granules is one

of nutrition and that they disappear on prolonged exertion.

Lastly, it is of interest to note that no changes in the brain-cells were found which might not reasonably be supposed to be capable of recovery had the patient lived.

In the Acuter Forms of Gonorrhœal Salpingitis when specific vaginitis and endometritis are also present, and in gonorrhœal vaginitis when it may still be possible to limit the upward spread of the disease, local treatment is of very great, and, indeed, of primary importance. As regards the gonococcus, the strongest and best local germicides known (according to Neisser) are the nitrate of silver, the perchloride of mercury and ichthyol, and it is on one or more of these that chief reliance should be placed. In all cases of acute gonorrhœal salpingitis in which the uterus and vagina are also affected, I use a vaginal suppository of ichthyol (10 per cent.) every night and a douche of crude acetic acid during the day. In cases of complicated gonorrhœal vaginitis, especially in hospital practice, I generally use a vaginal suppository of silver nitrate ($\frac{1}{4}$ gr.) every night, and the same vaginal douche of pyroligneous acid (℥ss and Oj) twice during the day. If, as only very rarely happens, the patient comes almost immediately after exposure to contagion it may be advisable to disinfect the vulva, vagina, and cervix manually, as in a vaginal cœliotomy. In one case of vaginitis of about two days' duration, in which the patient was already feeling considerable and rapidly increasing discomfort, but in which, it is only fair to say, the gonorrhœal origin was never thoroughly established, I did this with the very best result. The disinfection was repeated three times, and the patient was directly cured with no retention or relapse. In cases where there is no evidence of endometritis or tubal disease, the local treatment advised contains all that is required, and this should be applied in the simplest possible manner. No unnecessary examination should be made, and the use of the sound should be forbidden as most dangerous.—J. W. Taylor, *Annals of Gynæcology*, July, 1899.

EPILEPSY AND HYSTERIA.*

BY

F. GRAHAM CROOKSHANK, M.D.Lond.

AMONG the many interesting clinical facts concerning epilepsy, few are more important than those which demonstrate the intimate association which not uncommonly exists between epilepsy and hysteria. Unfortunately these facts have, in this country at all events, scarcely received due attention.

I happen to have under observation at present three cases which illustrate, I think, three of the ways in which hysteria may be associated with epilepsy.

In the first case true epileptic fits are followed immediately by phenomena (clownism and zoopsia) so generally regarded as hysterical that their occurrence is by some said to be evidence of the hysterical nature of any preceding convulsion.

The second case affords an instance of definite hystero-epilepsy occurring in an epileptic.

The third exemplifies the occasional connection with epilepsy of the cataleptoid and hypnotic forms of hysteria.†

Singularly little is stated in English text-books relating to these and kindred manifestations in epileptics. We know, of course, that hysteria, just as any other disease, may coincide with true epilepsy. But it seems clear that not infrequently hysteria is set up as a result of the epilepsy. Common experience shows us how much the mental complexion of the ordinary epileptic resembles that of the hysterical girl. The obliquity of morals, the outbursts of temper, the prevarications, the craving for sympathy and attention, the morbid religiosity: all these are familiar to us. And it should not be surprising that, with the ground thus prepared, the recurring shocks of epilepsy should be reflected in hysterical paroxysms.

Amongst the few definite statements having relation to this subject that I have been able to find

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are those of Sir Wm. Gowers, who affirms that it is in the first half of women's, and the first third of men's lives, that hysteria complicates epilepsy. Sir Wm. Gowers also states that when hysteroid attacks follow epileptic fits the previous history is usually one of epilepsy. But when, as in my first case, the phenomena of hysteria are, as it were, combined with those of the epilepsy, it is said that there has been an hysterical bias from the first. In my case that is not so. And for some reasons one would be almost inclined to think that the posturings and attitudes are not so much hysterical in themselves as phenomena which, like automatism, may occur after either epileptic or hysterical convulsions. Though not strictly relevant to the subject, may it be asked if there are any records of hysteria or automatism occurring after uræmic convulsions? But, after all, the practical point is that clownism and zoopsia must not be considered evidence of the hysterical nature of a convulsion.

The only safe rule in diagnosis is never to attach any weight to the apparently hysterical nature of fits till by repeated observation the possibility of epilepsy can be excluded. By no other rule can we avoid falling into that grievous error—the overlooking of the true background to hysterical symptoms.

For we must recognise that there is hardly any individual sign of epilepsy which is not sometimes simulated by hysteria, and there are few if any hysterical phenomena which may not be interwoven with true epilepsy.

But if, leaving for the moment the practical and diagnostic question, we attempt to form any notion of the connection between epilepsy and hysteria we are forced to realise our ignorance of the essential nature of hysteria itself; unless we have some notion of the pathology of primary hysteria we cannot discuss that of post-epileptic hysteria. What we can say of hysteria is that clinically it appears as a series, incoherent and not easily definable, of somatic phenomena met with in individuals of a peculiar and well-known mental complexion.

Amongst the somatic phenomena are, of course, the peculiar and characteristic paralyses, anæsthesias, and paræsthesias, and the group of symptoms—cough, vomiting, neuralgia, arthralgia, and so forth—which so closely simulate the symptoms

of organic disease. But in some respects the most important are the disorders of nutrition and metabolism, which have been revealed by the work of De la Tourette and others, who have examined with infinite care the urine passed after hysterical paroxysms. If any observations were necessary to convince us of the reality of hysteria as a disease, these works would do so surely enough. Yet still one meets with medical men who seem unwilling to recognise hysteria as a real disease, and the hysterical simulation of other diseases as objective only and in no wise of volitional inception. It is, however, impossible to get away from the strictly logical deduction that the symptoms of hysteria depend in the first place on the condition of certain brain-cells, almost certainly cortical, and those which in the hierarchy of nervous centres have the power of supreme inhibition. But surely it is unwise to say that because we cannot demonstrate in stained and hardened sections the physical condition underlying hysteria, that hysteria is a functional complaint only. For a certain amount of contempt, if not a connotation of moral wrong, seems to attach to the word functional as used by many medical men. " Only functional," they say of a paralysis. But the paralysis is there all the same. And, though we do not always recognise the fact, epilepsy, paralysis agitans, and a host of other grave disorders, are for aught we know as purely functional as hysteria is said to be.

Again it is too often forgotten that frequently grave organic disease, such as disseminated sclerosis, meningitis, and tumour cerebri, is only manifested by hysterical symptoms; that is to say, gross brain lesions, which directly produce no symptoms, may set up in more or less remote brain tracts the physical state which is revealed by the perversions of function that we call hysterical. Surely it is in this fact that we have the key to post-epileptic hysteria.

The repeated discharges of energy from the highest motor centres that we call an epilepsy induce in the highest brain-layers of all—possibly by disturbances of vasomotor balance—the physical cell states which underlie hysteria. And, of course, is it obvious that those who are, as we say, of hysterical tendencies, those whose highest frontal layers tend by reason of their original structure to break down in this peculiar way

should be those who, when they acquire epilepsy, develop the gravest paroxysmal forms of hysteria.

We are gradually learning to bring hysteria into line with bodily diseases and to accentuate less strongly its psychical side. And hence we are quite justified in looking on it as a brain state that may be set up by brain diseases, such as tumour or epilepsy, though, of course, a hundred and one other causes, auto-intoxication, shock, or congenital bias may determine it.

Perhaps, too, we shall gradually come to accentuate the importance of the very real and ever-present physical signs of mania, melancholia, and dementia, and, describing them from the physical instead of the psychical side, bring them into line with brain diseases as certainly as we do epilepsy itself, now that we have forgotten the superstition of demoniacal possession.

THE issue of a new and revised edition of Mr. Frederick Treves' well-known work on ' Intestinal Obstruction ' is an occurrence of some interest to the medical world. The volume has been almost entirely re-written, this having been found necessary to enable the author to embody the extensive additions to our knowledge of the pathology and clinical manifestations of intestinal obstruction which have been made during the fifteen years since the appearance of the first edition. In his preface Mr. Treves states that it has been found more convenient to divide the subject into three distinct parts, and to consider first the pathology of intestinal obstruction, then its clinical manifestations, and finally its treatment; in fact, the entire arrangement of the work has been altered, and the above is only the author's diffident and modest way of saying that the accumulated experiences of a surgeon exceptionally versed in intestinal obstruction are now available in a succinct and well-arranged book, so that practitioners can easily consult its pages when in doubt and difficulty concerning one of the most perplexing problems that may at any moment confront a medical man. Cassell and Company, Limited, are the publishers, and the print is of a comfortable size for reading, a point too often overlooked in the present day. The illustrations number one hundred and twelve, and form a feature of the publication worthy of much praise.

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* *Specially reported for The Clinical Journal. Revised by the Author.*

NOTICE.

ON TWENTY CONSECUTIVE CASES OF UTERINE MYOMA.

BY

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FOR permission to publish notes of the following cases I am indebted to Mr. J. Bland Sutton, under whose care they were at the Chelsea Hospital for Women.

All the patients have been under my personal observation, and I have selected them, because they admirably serve to illustrate the two objects with which this paper is written.

The first object is to emphasise the common symptoms of these tumours.

I think there has been, in text-books, a tendency to minimise the dangers of uterine myomata, possibly as an excuse for insufficient methods of treatment. With increased surgical resources and ever-growing experience there remains no shadow of an excuse for fearing to look these dangers in the face, and by the light of their proper realisation to boldly confront and combat the disease. Menorrhagia is not the only or all-important symptom of uterine myomata; these tumours do frequently obstruct, inflame, slough, or cause pain, and, moreover, it is quite rare to find only one of these symptoms present at a time, they being usually more or less combined. The most casual glance at the accompanying table will prove this beyond doubt.

The second object is to give in outline the principles which govern the modern treatment of these tumours, and it will be seen that the list of cases includes fifteen of abdominal hysterectomy, three of abdominal myomectomy, and two of vaginal enucleation.

Glancing, then, at the symptoms presented by these cases we see that in all but one they were multiple. Let us briefly consider them separately.

Case.	Symptoms.	Operation.	Result.
1	Menorrhagia. Metrorrhagia. Painful and frequent micturition.	Hysterectomy. Both ovaries retained.	Complete Recovery.
2	Menorrhagia. Fever. Offensive discharge. Frequent micturition. Debility.	Sloughing myoma. Hysterectomy. One ovary retained.	„ „
3	Menorrhagia. Pain. Enlarging belly. Œdema of legs. Dysuria. Intense anæmia.	Hysterectomy. One ovary retained. (Myoma, 14 lbs.)	„ „
4	Continuous pain. Menorrhagia. Metrorrhagia. Frequent painful micturition. Painful defæcation.	Hysterectomy. Both ovaries retained.	„ „
5	Menorrhagia. Pain. Debility.	Abdominal myomectomy.	„ „
6	Menorrhagia. Metrorrhagia. Pain. Enlarging belly. Debility.	Hysterectomy. Both ovaries retained. (Myoma, 12 lbs.)	„ „
7	Continuous loss. Foul discharge. Pain. Weakness. Fever.	Hysterectomy. Fibroid uterus with carcinoma. One ovary retained.	„ „
8	Very severe menorrhagia.	Vaginal enucleation.	„ „
9	Menorrhagia. Enlarging belly. Œdema of legs. Fever.	Hysterectomy. Tumour adherent to vena cava. One ovary retained.	„ „
10	Menorrhagia. Pain. Debility.	Hysterectomy. One ovary retained.	„ „
11	Extreme menorrhagia. Intense anæmia. Frequent painful micturition. Continuous high fever.	Hysterectomy. Both ovaries removed as inflamed. (Myoma sloughing.)	„ „
12	Menorrhagia. Sacralgia. Debility.	Vaginal enucleation. ...	„ „
13	Œdema of legs. Menorrhagia. Dysmenorrhœa. Frequent painful micturition. Fever.	Hysterectomy. One ovary retained.	„ „
14	Very severe dysmenorrhœa. Menorrhagia.	Hysterectomy. Both ovaries retained.	„ „
15	Continual pain. Œdema of legs. Dysuria.	Abdominal myomectomy.	„ „
16	Menorrhagia. Frequent micturition. Debility. Anæmia.	Hysterectomy. Both ovaries removed (diseased). Right ureter was pressed on and obstructed. (Myoma, 16 lbs.)	„ „
17	Menorrhagia. Pain Debility. Frequent micturition. Emaciation and anæmia.	Hysterectomy. Both ovaries removed (diseased). (Myoma, 14 lbs.)	„ „
18	Œdema of legs. Great weakness. Frequent micturition. Emaciation.	Hysterectomy. One ovary retained. (Myoma, 18 lbs.)	„ „
19	Menopause four years ago. Severe pain. Severe cystitis. Fever. Retention of Urine.	Hysterectomy. (Myoma impacted in the pelvis.) One ovary retained.	„ „
20	Severe dysmenorrhœa. Bedridden one week in every four.	Abdominal myomectomy.	„ „

HÆMORRHAGE.

Menorrhagia was present in sixteen cases out of twenty; in a few some inter-menstrual loss existed as well. The amount of loss varied, in some being merely inconvenient to the patient, she seeking relief on account of other symptoms, but in others it was the leading and predominant feature. Notably was this the case in No. 11, who was in a condition of remarkable anæmia. She was only twenty-six, another interesting point, and it would appear that fibroid tumours occurring at such an early age, do lead to very severe and marked symptoms.

It is a remarkable fact that the presence of a fibroid of the uterus frequently prolongs the menstrual life, and this should be taken into account when the question of operation, owing to severe bleeding, has to be discussed. Case 7 illustrates this. She was still menstruating, though over fifty-five years old.

PRESSURE SYMPTOMS.

Pressure on the bladder, bowel, or abdominal veins, either separately or conjointly, occurred in eight cases. The commonest was that on the bladder, causing pain and irritation. In some, notably in Case 19, actual cystitis existed, in the

others a small quantity of pus in acid urine was frequently found, very possibly from the ureters, for that these are actually pressed on and obstructed is seen in Case 16, in which both ureter and kidney were dilated.

A point we continually notice here is the large amount of urine passed in the first twelve hours after hysterectomy, as compared with ovariotomy.

Obstinate constipation is frequent with large myomata, and some of the cases had much pain also when at stool. Several patients had œdema of the legs from pressure, and in Case 9 the tumour actually adhered to the vena cava.

DEGENERATIVE CHANGES.

One cannot help being struck with the frequent presence of fever in these cases. Six exhibited it. In the lesser degrees it is often due, I believe, to insufficient drainage from the enormously enlarged uterine cavity, leading to retained discharges, decomposition, and septic absorption. In the higher degrees, as in Cases 2 and 11, inflammatory changes leading to sloughing are present, and the patient presents all the features of chronic sapræmia. I do not believe that aseptic cystic degeneration causes fever, but only when the softening is due to septic organisms.

PAIN.

Pain was present in eleven cases, usually abdominal and continuous. In Cases 14 and 20 it was the principal complaint, and took the form of severe dysmenorrhœa. The reason for menstrual pain does not seem very clear, but I know it is not infrequently present.

When a myoma inflames it is tender to the touch, while very large tumours, such as Nos. 16, 17, and 18, cause weariness and dragging pain by their mere weight.

Case No. 7 proves that uterine myoma does not protect the organ from cancerous growth.

TREATMENT.

Let us now turn to the treatment of these formidable tumours. The principle is shortly expressed thus :—The removal of the tumour by itself if practicable, with the diseased organ if this cannot be safely effected.

In the past a number of futile methods have been advocated which need not detain us here,

but one other operative procedure remains which cannot be passed over, and that is oophorectomy. After removal of both ovaries in most cases bleeding from a fibroid uterus ceases. In a goodly number, however, it continues the same or worse than before. In a very small number of cases the tumour actually shrinks, in a much larger number it grows as rapidly as before, while in the largest proportion of cases it ceases to grow, though it does not diminish in size. Now the ill-effects of uterine myomata are, as we have seen, not at all limited to hæmorrhage. Nay, more, the most serious, that is to say, septic changes, are most of all liable to occur at the very time when the menstrual life is closing. Oophorectomy then actually hastens the likelihood of such changes, and it does not alleviate symptoms due to the mechanical size and shape of the tumour, except in those rare cases, in which it leads to its actual diminution.

Oophorectomy has the questionable advantage of being in general an easier proceeding than hysterectomy, questionable because it encourages unskilled operators to interfere in cases they should let alone. No man should undertake operative treatment of uterine myomata unless he is able and prepared to do hysterectomy, for oophorectomy and enucleations may result in such severe hæmorrhage, that the only resort left to the surgeon is to remove the uterus.

Oophorectomy has a lower mortality than hysterectomy in published statistics. Such figures are misleading because no account is taken of those cases in which, the ovaries having been removed, hysterectomy had to be done to check bleeding, or of those cases in which it was found impossible to remove the ovaries, and the operation had to be abandoned. These failures have no place in statistics, while every failure in hysterectomy is recorded. If the average life after these respective operations were estimated it would be found that as a life-saving measure, in the broadest sense of the phrase, hysterectomy was far in advance of the lesser operation. I am speaking, of course, of the results obtained by expert operators, who have served a long apprenticeship in this class of surgery. No one who has not should attempt these operations.

Oophorectomy then should not be done for uterine myomata, because it sacrifices a healthy organ

for an unhealthy one, in the hope of a result, which at the best will only partially rid the patient of her symptoms and in many cases actually increases the risk of the tumour. For if not done with the strictest asepsis, it is very likely to infect the myomatous uterus, thus bringing the patient's life into danger at once and necessitating hysterectomy after all.

As to the sexual injury caused by these operations, a myomatous uterus is most unlikely to conceive. But if such an accident befall the patient her life is at once imperilled, owing to the rapid increase in size which the tumour undergoes. She is most unlikely to go to term; abortion will probably occur. The loss of such a uterus then is not to be deplored; it has become a useless and dangerous encumbrance. One or both ovaries being retained, she will not suffer the effects of a sudden and premature menopause. On the contrary, it is not uncommon for the patient to continue to menstruate from the stump of the uterus remaining, and some years later to pass through a normal climacteric with its attendant flushings and nervous symptoms.

The lot of a woman who has lost healthy ovaries, while her myomatous uterus remains with her, with its attendant risks, is much to be commiserated.

With regard to the indications for operative interference I would say that by the time a patient comes complaining of symptoms due to a uterine myoma, the chances of any permanent improvement by palliatives measures are very small. Still there are cases in which, from various reasons, it may be desirable to postpone operation at but little increased risk. Patients are frequently sent out from the hospital for six months, that palliative treatment may be tried before an operation is determined on. Unfortunately, they nearly always return no better, in many cases worse. " Symptoms, not size," is the surgeon's rule. A small myoma in the pelvis will cause danger to life, when one many times as large in the abdomen will merely invalid the sufferer. Fever, foul discharge, and pressure symptoms, require prompt relief.

Finally, as to the choice of means for carrying out our operative principle. Vaginal or abdominal myomectomy (enucleation), vaginal or abdominal hysterectomy are the procedures open to the surgeon. How does he select them?

Vaginal enucleation should be chosen when the tumour is small and submucous, sessile, or pedunculated, and especially if growing from the cervix. Its disadvantage is that one works in the dark, and hence it should never be selected for mural or subperitoneal myomata, nor indeed for large tumours of any sort.

Abdominal myomectomy is to be adopted for pedunculated subperitoneal growths always. Sessile subperitoneal myomata can also be usually shelled out. Mural myomata should rarely be subjected to this method of treatment, for the haemorrhage from the cavity left will probably be severe, and the operator should be prepared to remove the uterus itself, as the only means of checking the bleeding. Vaginal hysterectomy is not to be commended for myomata, the mass being as a rule too large to get out this way.

Abdominal hysterectomy is by far the most frequent proceeding called for. The operation depends for its success, beyond the individual skill of the operator, on perfect asepsis and haemostasis.

With regard to the treatment of the ovaries, it will nearly always be found that the broad ligament has been much stretched by the tumour, and when the uterus is removed the ovaries hang very loose and movable on the long stumps of broad ligament. One is invariably longer than the other, and this should be removed, because the long pedicle is apt to contract adhesions to the bowel and cause trouble afterwards. Cystic ovaries are common in association with myomata, and one at least should then be removed. Where both ovaries are healthy, and the pedicles short, both should be retained.

That the results of this operation in skilled hands are remarkable this paper shows, and I can further add, from my own personal experience of the after treatment of these patients, that there is no class of case which gives so little trouble in convalescence as those of abdominal hysterectomy. Nor are the ultimate results less encouraging. The improvement manifested by these patients in a few months only is truly remarkable. There is a conspicuous absence of that dragging abdominal pain, too often remaining after removal of the appendages for disease, or even after ovariotomy, and due probably to adhesions between the stump and omentum or bowel. After low amputation of the

uterus, the bottom of the pelvis is as smooth as a pudding-basin, and there is nothing left to form adhesions. Examination a year later reveals a perfectly movable and non-adherent stump, and to this is due the freedom from pain. In short," the results are as gratifying to the patient as to the surgeon, who will have difficulty in recognising, in a robust woman, the anæmic invalid of but a few months ago.

When may a Puerpera leave the Bed?— Charles followed the advice of Küstner, who permits women to leave the bed three days post partum, claiming that this aids the involution of the uterus. The author, who is physician-in-chief of the Maternity Hospital in Lüttlich, substantiates Küstner's statement. He remarks, however, that it would not be advisable in general practice, because the women, although out of bed, must abstain from all work and exertion.

According to Küstner, a woman may leave the bed on the fifth day, not only without harm, but often to great advantage. Involution is more perfect, the lochial discharge decreases, and there is no increased danger of prolapse. It facilitates the evacuation of bladder and rectum, and diminishes the liability to flatulency. The abdominal walls sooner regain their firmness, and cardiac depression is less marked than after prolonged rest in bed. After abnormal confinements and obstetrical operations the period of rest should be extended. Olshausen emphatically disapproves of Küstner's advice, and draws attention to the fact that the wounds which more or less accompany every confinement are apt to reopen. The uterine ligaments at this period have also not undergone sufficient involution, and the woman is more liable to incur uterine displacements. He cannot comprehend that leaving the bed on the fifth day should tend to make the abdominal walls more tense, and believes that the weight of the intestines favours the liability to a pendulous belly. It is also likely to have an unfavourable influence upon the circulation, because the dilated veins are likely to remain enlarged. Schatz states that the distended pelvic floor best regains the normal condition by prolonged rest in bed, and can see no reason for permitting the puerpera to leave her bed thus early.—*Amer. Journ. of Obstetrics*, Aug., 1899.

WITH
MR. WALLIS IN THE WARDS OF CHARING CROSS HOSPITAL.

THIS woman, aged twenty-nine, has, as you will see, a marked swelling in connection with the left wrist-joint and above and below the anterior annular ligament. In addition she has a slight open septic wound. There is a very large amount of fulness over the wrist-joint, and in the hypothenar eminence. Fluctuation is not distinctly felt. The part is tender. Another point to observe is the marked wasting of the interossei, not a matter for surprise when I tell you that she has hardly used her wrist for some years. It it obvious that she has tubercular disease of the wrist, commencing probably in the synovial membrane. Her chart shows that she has had a hectic temperature. I must ask you to take my word for it that it is extremely painful, and the expression of the patient's face shows she has been in the habit of suffering a good deal from it.

The next is a patient who came with the same sort of trouble, upon whom I have already operated. She has had, for some considerable time, tubercular disease, chiefly of the extensor tendon sheaths. I dissected these out at the operation. She also had a large patch of lupus over the back of the thumb. The whole of the affected skin was removed with a perceptible margin of healthy skin. The denuded area was covered with a Thiersch's graft, and the graft has taken well, except at one spot. I fear very much that there is still some tubercular trouble around the wrist. As is not uncommon with these people, she has a secondary focus elsewhere, namely, on her leg. This was operated upon at the time, but not with the most happy results. A posterior opening was made and the wound drained for twenty-four hours. It healed up by first intention. It is six weeks since the operation was done, and the scar is now breaking down. I show you the part of the patient's thigh from which the graft was taken. It has nicely healed, the scar is smooth and there is no scar tissue. In six months' time there will be nothing to show that there has been a graft taken from it, although a large area has been taken off.

This next girl is one of a large series of cases.

You will see she has scars about her abdomen, and one on the inner side of the thigh. She is a fairly healthy-looking girl. She first noticed a swelling on the inner side of the right thigh, and it was because of that she came in. She was sent here really because the case was thought to be one of femoral hernia. When she came in we found she had a fluctuating swelling above Poupart's ligament. It was a large swelling, and we came to the conclusion that it was a large psoas abscess, which indeed it proved to be. In all these cases it is well to examine the other side, which was done both before and at the time of the operation. We found that on the opposite side there was a large fluctuating swelling. This girl had never complained of backache at all, and she has no outward sign that there was any spinal disease of any sort. In those instances in which the disease is low down, there is not necessarily any deformity or any pain. This girl has not complained of any pain at all. The last case upon which I operated was that of a man who came in with a very large swelling extending below into his thigh, as this has done, and he applied for relief because when he bent down to do up his boots, or anything of that sort, the swelling got in the way; there was no pain. I had here another patient, and I think I have shown it to this class, with double psoas abscess which was similar to that in this girl. She complained of no pain; it was simply the swelling which called her attention to it. You will notice that in this patient there is no deviation of the spine, and no prominence or kyphosis. Nearly two pints of pus was evacuated from her right abscess, and quite a pint out of the other. The method by which I treat these cases is first of all to incise in the most prominent part of the swelling to get down to the abscess, and in that lies practically the only risk, because if you are not very careful you may open up the peritoneal cavity. Sometimes the margin between the peritoneal adhesion and the abscess cavity is very limited. In this case I came on to the peritoneum before I recognised it, but it was not opened. If attention is kept to the inflammatory tissue there will be no difficulty in this respect. The incisions in this case were sewn up, except posteriorly. The drains of the posterior incisions were left in twenty-four hours. As a rule that is all that is necessary, and then

the wound is closed up. I ought to add that before closing up the wound at the operation one makes a very thorough cleaning of the cavity, by swabbing and irrigation, so as to get all the lining membrane out of it. It is much better to close the wound after twenty-four hours' drainage, because otherwise you run a risk of the wound becoming septic, and when once a case of this sort becomes septic there is no hope for it but many years of chronic invalidism and a very bad result at the end of that. Therefore, for the last three or four years I have been in the habit of thoroughly washing out these psoas abscesses and sewing the wound up after leaving the drain in for twenty-four hours. If the abscess fills again it should be opened again if the recurrence shows itself in a convenient position. I am bound to say that, in certainly the last eight cases in which I have carried out this procedure, I have had no fault to find with it, the patients having been extremely well. This girl will be going out of the hospital very soon. There has been no trouble except the slowness of the healing of the skin wound, and there has been no high temperature. The highest temperature was 101°, and that occurred when the wound was dressed; it has been practically normal ever since.

This next patient is a girl who has been coming to me in the out-patient department for some time with a tender ankle. The lower ends of the tibia and fibula appear larger than their fellows on the opposite side. The part is painful when pressed, I do not think her pain is so great as it has been, and it is not so inflamed. This is an example of tubercular ankle in a very early condition indeed, and I have no doubt that with rest and good food and sea air she will get quite well. The original idea was to operate on the ankle, but I was reluctant to do so if it could be avoided.

This man presents a very common complaint, namely, a varicose ulcer. He has been wearing an elastic stocking for some time. His trouble dates back two and a half years. You will see an obvious varicose vein, which is thickened, extremely tortuous and running down over the region of this ulcer. The ordinary history of these cases is that the patient has a varicose vein for a longer or a shorter time. Gradually there is a little pigmentation of the colour which you see here, not like ordinary pigmentation, but of a brown tint,

and that tint is always seen in connection with varicose veins. The brown pigmentation increases and varicose eczema results. Then eventually some slight traumatism starts an ulcer of this description; only a slight cause is sufficient, and the whole thing goes from bad to worse. The pathology of these ulcers is interesting, because it points to cure as far as cure can be certain. There is an infiltration of the skin, a chronic inflammatory process, and in course of time this brown pigmentation shows itself. After a further interval this ceases to be skin at all, it becomes merely fibrous tissue covered with epidermis. That is the reason the ulcer so easily breaks down, because it has not the ordinary nutrition from the glands of the skin. The only cure I know for this condition is removal of the varicose veins. A case of this sort looks rather hopeless, but I have operated on many which were in worse condition than this. These patients should be put to bed and kept absolutely at rest until the ulcer is either healed or got into as healthy a condition as possible. Then the veins should be freely removed and the tissues should be opened up right down to the ulcer if necessary. Any veins which are below might also be treated at the same time. The only point is that when you come to close the wound it is well not to sew up the part near the ulcer, because the tissue there having undergone this chronic change any tension put upon it only causes it to come to grief. It is better to let it granulate up. An incision here does not gape much; there is little elasticity in the tissues. Unless the cause is removed this chronic inflammation may go on until the whole circumference of the leg becomes involved, and may go for fifteen to twenty years a constant source of pain and annoyance to the patient. Whenever this brown pigmentation comes on, you may be sure it will break down unless the patient can lie up and bandage the leg; and even then it will break down again when he or she gets about on it again.

This man, aged fifty-six, has a grave condition. Nine months ago he had a small swelling in the neck, just below the right ear, and this was removed at another hospital. Before he can possibly have recovered from the effect of this wound the present swelling began to grow on the scar of the old one, and it has continued to grow ever since. The swelling is large and hard, and firmly fixed, affecting the deeper structures. It is connected with the ramus of his jaw and the sternomastoid. There can be no question that it is a malignant growth, and the interesting part of it is that there is no primary focus which we can make out. Primary epithelioma (which I think this growth to be) in the neck is quite an uncommon occurrence. In fact, it has been denied that it ever exists, because it is said that there is always some small primary focus which has escaped attention, either in the region of the larynx or the pharynx, or hidden away somewhere in that region. But cases have been placed on record in which there was no primary focus. I have examined this man's fauces with my finger, but I have not used the laryngoscope yet, and indeed that will be very difficult, because he cannot open his mouth to any useful extent for the purpose owing to the growth. Now, in a patient in his condition (obviously very anæmic and looking much older than he is) the whole of the growth could not be got away; and, indeed, his general condition is against operative measures.

In connection with the last case, our next patient has a condition which is really interesting to him and to me, and I think to you all. He has had an ulcer on his tongue which has worried him for some time. It is quite a small affair, and has been there for some four months. He has been coming to my out-patients' for six weeks. He had an ordinary dyspeptic ulcer on the side of his tongue, which was painful, and for which he came. To-day, for the first time, I notice that his ulcer is rather umbilicated and there is a very marked induration over it. It is proposed to microscope a piece of it, as I fear it is an early case of epithelioma. It is interesting because one very rarely gets epithelioma so early. I cannot feel that there are any enlarged glands. Of course a small epithelioma like that might be hidden away in the pharynx or larynx and might escape observation, and might implicate the neighbouring glands, and become another such case as that which we have just seen.

This young man whom I next show you fell down nine months ago and hurt his ankle. Ever since that time he has had difficulty in walking and pain. These cases are rather interesting because they are so troublesome. It might, perhaps, be thought by some that he is neurotic, but

he is not; his case is quite genuine. The reason of his condition is that after the injury the man keeps the structure and the parts near fairly at rest for a considerable number of weeks and gets contraction of the tendo Achillis; and when he starts walking again, in endeavouring to approximate his foot to the surface on which he has to walk, he cannot do it with the readiness he can in the other foot. Consequently he has to bring his foot high up and that throws the weight of the body on the weakened part, and it is therefore getting a wrench. You can prove that by trying to get the ankle extended, when you will find that, however hard you may push, you cannot get it far. I have recommended him to go through an exercise, which is certainly doing him a great deal of good, especially under the threat that operation will have to be resorted to if that does not benefit him. He puts his foot flat on the ground, and then gets down as near the ground as he can with it in that position. Ordinarily one can get nearly on to the ground, but he cannot. But under this method of exercise he can do very much more with it than he could at first. If you try the exercise for yourself you can feel what an amount of tension is put upon the tendo Achillis. It so happens that this morning I had to divide the tendo Achillis of a patient for a similar condition to this. She had an accident while hunting some time last season, and I have tried all palliative measures with her, and she returned to me last week rather worse than better, so that I divided the tendon this morning as I have mentioned. I do not doubt but that she will get perfectly normal and painless ankle action again.

A Mechanical Laxative.— Upson, in the 'Philadelphia Medical Journal' of July 22nd, 1899, says that the best remedial agent of this class is white liquid petrolatum, given by the mouth in doses of two or three ounces. Liquid petrolatum has a great advantage over olive or cotton-seed oil, as it does not become rancid either in the body or out of it. It is absolutely non-irritant, is lighter than water, does not distend the bowel, and in his experience it diminishes flatulence. It is readily taken and well borne by invalids.—*Medicine*, September, 1899.

TWO CLINICAL LECTURES

ON

THE DIFFERENTIAL DIAGNOSIS OF SCROTAL SWELLINGS.

LECTURE II.

Delivered at the Post-Graduate College, West London Hospital, July 17th, 1899,

By W. McADAM ECCLES, M.S., F.R.C.S.,

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GENTLEMEN,—This afternoon we take up the second half of our subject, the diagnosis of scrotal swellings, namely, the diagnosis of irreducible scrotal swellings. This is a large subject, as you will see by the classification that I have placed on the board, and I shall have to content myself with dealing only with a portion of it.

IRREDUCIBLE SCROTAL SWELLINGS.

(1) Herniæ .... (a) Simple.
          (b) Strangulated.
          (c) Obstructed.
          (d) Inflamed.

(2) Hydroceles...... (a) Vaginal { i. Serous.
                                   ii. Chylous.
          (b) Infantile.
          (c) Encysted of testis.
          (d) Encysted of epididymis.
          (e) Encysted of spermatic cord.
          (f) From dilatation of foetal remains.
          (g) Of a hernial sac.

(3) Hæmatoceles... (a) Primary.
          (b) Secondary.

(4) Sarco- } (a) Inflam- { i. Simple.
    celes }   matory   { ii. Specific { (a) Gonorrhoeal.
                                          (b) Tuberculous.
                                          (c) Syphilitic.
          (b) New   { i. Innocent { Solid.
          Growths   {   { Cystic.
                      { ii. Malignant { Sarcoma.
                      {   { Carcinoma.

The irreducible swellings of the scrotum may be firstly divided into herniæ, hydroceles, hæmatoceles, and sarcoceles. If one were to attempt to deal with all these it would take a very long time. Therefore I propose to refer chiefly to the first two of these, that is to say, herniæ and hydroceles, and to just touch upon the last two.

Herniæ are perhaps the most important of the irreducible scrotal swellings, and I venture to divide them into four classes—simple irreducible hernia, strangulated irreducible hernia, obstructed

irreducible hernia, and inflamed irreducible hernia. Here, again, as in the first demonstration, reference must be made to the fact that the terms "reducible" and "irreducible" are but relative and purely clinical, and, moreover, are frequently of only temporary import. A hernia which to-day would rightly fall under the heading of irreducible, may to-morrow be reducible. Again, a hernia which is irreducible in the hands of one surgeon may become reducible in those of another. Obstructed hernia is often only irreducible so long as the state of incarceration is actually present, and an inflamed hernia may be entirely reducible as soon as the inflammatory process has passed away. As I cannot this afternoon show you cases of strangulated, obstructed, or inflamed hernia, I shall confine my remarks simply to irreducible hernia in the scrotum. By that term I wish to indicate a hernia, the contents of which cannot be returned into the abdomen, and in which there is no further abnormal condition. Therefore there is a very marked difference between a simple irreducible hernia and a strangulated one. Yet you will find that most commonly they are put under the same category as irreducible herniæ. In the case of a strangulated hernia—while undoubtedly for the time being irreducibility does exist, yet this fact is not the all-important one in the state—it is the obstruction to the onward flow of the intestinal contents and to the proper return of the blood from the vessels of the bowel wall which are the serious factors in the case. A simple irreducible hernia may be of little actual danger or inconvenience to the patient, while a strangulated hernia is a menace to his life.

Let us, therefore, take the diagnosis of simple irreducible hernia in the scrotum. Here is a man who has such a condition of simple irreducible hernia. He presents a large swelling on the right side of the scrotum, which definitely extends upwards into the inguinal region. It is smooth on the surface, showing no obvious irregularities. There is some burying of the penis, but this varies much in different instances. When we come to handle the tumour we find its consistency is of some help in the diagnosis. It is elastic, but not uniformly so. It is "impressionable," as I am wont to call it, but not so much so as a reducible hernia. You will remember that when last time we had a case of reducible hernia it was so impres-

sionable that the finger and thumb could be practically made to meet through the tumour, and, after withdrawing the finger and thumb, it immediately returned to its former shape and size. In a reducible hernia this fact of "impressionability" (if one may coin a word) is very important. In an irreducible hernia the same kind of condition exists, but not to such a marked degree, because, generally speaking, the irreducibility is due to omentum, and one cannot press through omentum or press it aside as you can when intestine alone is present. Take this other patient, who has a reducible hernia and a hydrocele in the same side of the scrotum. On the former you can make a marked impression, on the latter none. This, I venture to think, is a fact which is a good deal lost sight of in the text-books when dealing with the diagnosis of certain forms of scrotal swellings from others. This feeling in the hernial sac is altogether unlike that in the sac of a hydrocele. Moreover the hernial swelling is not nearly so heavy as a hydrocele of the same magnitude would be, and is not translucent. There is an expansile impulse when the patient coughs, for although the greater part of the contents of the sac cannot be returned within the abdomen, yet more viscera can still descend into the sac and more contents can come into the imprisoned bowel. Two other points of interest in connection with palpation may be noticed, namely, that the testicle can be easily felt lying below the hernial sac. In irreducible hernia you will find the testicle will lie quite below, altogether different from the case of hydrocele, where you cannot discover the testis below the sac. Then, the spermatic cord is concealed by the presence of the hernia in front of it. When a patient with a reducible hernia coughs, the hernia descends in front of the cord, and the cord is obscured by it. This concealment of the cord is a very important sign in the diagnosis of an irreducible hernia. Further, if we percuss the tumour there is a dulness, owing to the fact that the bulk of the irreducible portion is omentum. On auscultation some intestinal sounds can be heard. It is not entirely dumb, as is hydrocele.

We now pass to hydroceles of the scrotum. These may be classified according to the table I have put on the board. Vaginal hydrocele may contain either serous fluid, or, in rare cases, and generally speaking in those patients who live, or

have been, in the East, of a milky character. There may be dilatation of fœtal remains, such as the hydatid of Morgagni, and the organ of Girades.

Here is the man whom we saw at our previous lecture. He presents a common vaginal hydrocele. You will notice there is a swelling on the right side of the scrotum, which is smooth on the surface and presents some dilated veins. Those veins probably owe their dilatation to the weight, and therefore to the pressure of the tumour upon the blood-vessels, and also because the scrotum in its increased size is supplied with more blood. There is no tendency for the swelling to run up into the inguinal region even when he stands up, which differentiates it markedly from hernia. The consistency of the tumour is uniform, whereas that of an irreducible hernia is irregular and uneven. It is very tense, not impressionable, and fluctuation can be elicited. The translucency is perfect, except at that particular portion behind which the testicle lies. Another method of ascertaining the position of the testis is by pressure. It is important to find where the testis is, otherwise one may possibly come upon it in tapping. In hernia, in the majority of cases, the testis lies below and behind, and is easily felt, whereas in hydrocele it lies surrounded by the fluid and cannot be readily palpated. There is no expansile impulse when the patient coughs. In hydrocele of the tunica vaginalis you may have a forward impulse if there is a hernia in the scrotum. The man we looked at just now will exemplify that. In his case you obtain a forward impulse in the hydrocele, but it does not expand; it is a forward but not an expansile impulse. You will notice here in the ordinary hydrocele that the cord is perfectly free—a very important point—and unconcealed above the swelling. On percussion the tumour yields a dull note, and to auscultation it is dumb. Unfortunately I have no case of infantile hydrocele to show you. In such a case there is patency of the processus vaginalis along the whole of its length, except at the deep ring or communication with the general cavity of the peritoneum, which is closed. Thus the swelling is irreducible, but it runs up into the inguinal region. At first sight this makes its diagnosis from an irreducible hernia somewhat difficult, but the fact of its translucency, its heaviness, and the absence of an expansile impulse on

coughing, are sufficient to distinguish the one from the other. Many of these cases of infantile hernia do have a forward impulse, but none an expansile one.

I now want to show you one or two encysted hydroceles. Here is an old man who presents an encysted hydrocele of the lower part of the spermatic cord. You will be able to feel his testicle at the lower part, and you will be able to get your fingers to meet across the testicle at the upper part between it and the swelling. I take it to be an encysted hydrocele of the lower part of the cord. Of course one cannot be absolutely certain as to the position of these fluid swellings where they are close to the testis unless one dissects them, but I think this is a case of encysted hydrocele of the lower part of the cord. One of the ways of diagnosing an encysted hydrocele of the cord is that when it is tapped the fluid is clear, thus distinguishing it from encysted hydrocele of the epididymis or of the testicle, in which the fluid is generally slightly milky owing to the admixture of spermatozoa. You will see it is very translucent, and the testis can be seen below.

The next patient has an encysted hydrocele of the epididymis, or what I take to be such. You will make out the testicle, but you cannot get your fingers between the testicle and the fluid swelling above, they are practically part and parcel of the same swelling. As to translucency, you see it is beautifully translucent. Not all encysted hydroceles of the epididymis have milky fluid, particularly in old men, obviously because the secreting power of the testicle is to a certain extent lost.

As I have already remarked, dilatation of fœtal remains is a rare condition, and I have not been able to obtain a case for this afternoon's demonstration. Again, hydroceles of hernial sacs are rare. They are very interesting conditions, more commonly found in connection with femoral than with inguinal hernia, and due probably to one of two causes, the commonest being a plug of omentum adherent in the mouth of the sac with a collection of fluid in the body of the sac below. The second cause is obliteration of the neck of the sac by inflammation, possibly the outcome of the pressure of a badly-fitting truss. In some of these cases one gets a fresh hernial sac pushed down above the closed sac below, so that there

is practically an hour-glass contraction. The neck of the original sac has become narrowed, or perhaps closed, and then another portion of peritoneum is protruded above and pushes the original pouch down. In the lower one you may find fluid, with perhaps a tag of omentum lying in and blocking the opening, and in the part above you may get intestine. This is a condition which may be extremely disconcerting in operations on strangulated hernia. Occasionally one opens the first sac, finds nothing but fluid inside it, or, perhaps, a little omentum, and it is thought that a mistake has been made and that it is not a strangulated hernia after all, but an intestinal obstruction within the abdomen. However, by exploring further you may find a small sac in which there is a knuckle of intestine strangulated at the higher mouth. Therefore this hour-glass contraction of the sac is an important matter.

Just a word or two about hæmatoceles. They are either primary or secondary. Primary hæmatoceles, that is to say, instances of blood in the tunica vaginalis, are almost always due to injury, which injury may be either accidental, as, for instance, a kick or a blow, or otherwise, as, for instance, in the tapping of a hydrocele, when a vein may be opened or the testicle punctured. Secondary hæmatoceles are found in connection with malignant disease of the testicle. The tunica vaginalis in these cases contains fluid which has come from the vascular new growth of the body of the testis. Hæmatoceles are fairly easily diagnosed, particularly the primary ones on account of their sudden onset, the great pain due to the very rapid distension of the tunica vaginalis, the appearance of blood in the tissues of the scrotum, and of the fact that, if a needle is put in, blood only is withdrawn. They are non-translucent, heavy, and generally they have some fluctuation. Hæmatoceles associated with malignant disease practically only show themselves by the fluid consistency of the swelling and by the fact that puncture of them allows blood to come out.

With regard to the question of sarcoceles, I think it is hardly necessary for us to deal with them this afternoon. Of course the inflammatory ones are comparatively common, whereas new growths are comparatively rare. I thought that you would like to see the nature of the fluid which some of these hydroceles contain, and as some

of the patients present want to be relieved, I will tap them before you go away.

The character of the fluid withdrawn is a final aid in the diagnosis of the hydrocele swellings.

Observe the fluid from this vaginal hydrocele. It is clear, amber coloured, limpid, does not coagulate, and has a specific gravity of 1022 From this encysted hydrocele of the cord, we have obtained a colourless, limpid fluid, whose specific gravity is much the same as that of the ordinary hydrocele.

Lastly, this encysted hydrocele of the epididimis has yielded a slightly opalescent fluid, whitish in colour, and of lower specific gravity.

Influence of Alcohol.

— In experiments to determine whether more work can be accomplished with alcohol than without, the results obtained were uniform, and clearly showed that—

1. Alcohol has a favourable effect on the work-product whether the muscle is weary or not.

2. This favourable effect appears almost immediately, but is very transitory.

3. Immediately afterwards alcohol has a very decided paralysing effect. About a half hour after taking alcohol the muscular power reaches a maximum that subsequent doses increase with difficulty.

4. The paralysing effect of alcohol outweighs the momentary stimulation; so that the total work-product obtained with the use of alcohol is less than that obtained without it. In other words, alcohol is a deceptive means of dulling the sense of fatigue, but its action is momentary, and in the end injurious; the paralysing effect upon the nervous system increases rapidly, and with such force that any momentary good effect cannot counterbalance it. Similar experiments with tea, coffee, and kola showed that the stimulating effect of these drugs, while less marked than that of alcohol, is continued longer, and is not followed by a paralysing effect, as in the case of alcohol.— Destrée, *Quar. Journ. of Inebr.*, January, 1899; *Monthly Cyclopædia.*

A VERY useful preparation of holocaine hydrochloride has been introduced by Burroughs Wellcome & Co., in the form of "tabloids," of the strength of gr. $\frac{1}{50}$, thereby enabling this anæsthetic to be more generally used in ophthalmic surgery, securing for the operator a rapid and complete anæsthesia.

THE PRACTICE OF BLOOD-LETTING.

By J. F. BRISCOE, M.R.C.S.

(Continued from p. 252.)

Conditions Indicating Blood-letting.

THE condition of the system indicating blood-letting is expressed by the word suffocation. In this act of suppression or checking of the metabolic processes of vitality it will be convenient to attempt some classification on a line which is brief but yet clear. As we talk of local and constitutional states of the body, I think we cannot do better than base our arguments on these conditions. With regard to the first, reference has been made, on the principles of anatomy, to the fallacy of local blood-letting where there is not a capillary connection between the skin and the internal part. Yet at the same time it should be remembered that in functional or other anomalous disturbances the application of leeches or " cups," as experimental agencies, may assist, quite apart from the real use of blood-letting, in ameliorating these irregular states. As derivative remedies they would appear to act very similarly to that of blistering over the region of the ovaries in cases of hysteria. This is one of the many empiricisms in medicine which the scientific observer endeavours to shun. However, the scientific elucidation of disease is not always, as we would wish, compatible with the practice of our art. There is much that is fashionable in modern medicine —new ideas, new names, new drugs, and new fads. Sir Samuel Wilks, in an article on " Appendicitis," says, " There is nothing new in appendicitis but the name."

At this juncture the remarks of John Hunter are worthy of our consideration. He says: " Bleeding in the part inflamed does more than empty the vessels mechanically, it acts by sympathy." As a common instance I will quote the thecal abscess. He further states the fact that the inflammatory process has a local excitant effect, and that there is some morbid influence at work. We as modern bacteriologists appreciate these views so long ago declared. Moreover, John Hunter's clear discernment led him to say, " When

bleeding is necessary, it should be as near the part as possible, in order that it may have the greatest influence on the part with the least damage to the constitution."

The local conditions indicating blood-letting are familiar to all of us, but I will just allude to a few. I will further confine myself to those bleedings. too, which are to be limited to small quantities. Those maladies requiring topical bleeding are either benign or virulent in nature. As examples, alveolar abscess, ordinary inflammation, chronic inflammation, thecal abscess, or any tissue requiring the relief of tension. The leech or scalpel will fulfil more or less the object of bleeding in these instances. But when the bleeding is for the relief of some organ or tissue within the three cavities of the body, then the operation more often comes under the heading of true venesection. Unless the practitioner is skilled in the use of the wet cup, and has experience in the application of leeches, it will be better for him to study the subject before he attempts it in private. Both procedures require practical knowledge. The remarks of Watson, as quoted by Dr. J. W. Ogle, are very true, and they apply equally to other operations in surgery. Dr. Watson remarks: " But, on the other hand, tne leeches seldom bungle in the operation, while the surgeon often does." Before closing these remarks I should like indirectly to mention " the dry cup," which produces a subcutaneous bruise. This artificial ecchymosis has been found to answer in the hands of some practitioners. In certain obscure local conditions, ringing the changes in treatment, with topical bleeding, the seton, the hot iron, or massage, seem frequently to effect a cure.

Every surgeon should carry some sort of venesector in his pocket. Maw and Thompson sell a handy form of instrument of the same pattern as the old lancet, except that it is in one piece of metal for the convenience of sterilising. However, the knife which comes to pieces (American pattern), and to which can be attached a blade of any shape, is convenient for all purposes besides that of venesection. The art of blood-letting is just as much a study for the student as any other speciality, requiring a system of rules, and it can only be acquired from practice and a thorough acquaintance with health and disease. To prescribe to you the principles and practice of the art I must ask

you to keep before your mind's eye the whole of the circulatory system, its action on distant organs when the heart is at fault, and *vice versâ*, the paralysing effect on the heart when the channels of the lungs are at fault. Again I have to remind you of the dual action of lungs and heart. That if either is abnormal in action there occurs asphyxial changes from a disturbed interchange of gases. No less have I to freshen your memory with the nervous supply of the circulatory system, and its close relationship with the said sympathetic nervous mechanism of the economy. Further, I must mention the evil results accruing to the inner life from an excess of foreign gases and other deleterious matter circulating in the vascular canals. Moreover, I must seek your indulgence and ask you to pay particular attention to the rules of blood-letting when you deal with the young and the old, also to caution you to stay a bit when there is hopeless malignity of the system. Yet again I warn you not to apply the art as if there were cut and dried aphorisms in venesection, but to treat each case on its own merits and on scientific principles. Above all, I wish to advise you to be prudent when you attempt to escape, or excuse yourself, by acting on the oft-repeated proverb " avoiding Scylla and falling into the arms of Charybdis." As I shall prove to you later on, the whirlpool will be one thing or the other, but for a certainty death, if your courage fails you. Finally, you will always consider the individual circumstances and conditions of everything that conduces to the success of the operation, not blaming a bad result because you have put off the operation till it is too late.

The blood-letter should remember that besides the few examples I have given where leeching is indicated, there are many similar states where local congestions are relieved by the leech. Particularly is this so with the peritoneum and pleura. But cupping over the abdomen is less satisfactory, and gives unnecessary pain, whereas in pleurisy a cupping glass better adapts itself to the hard thoracic wall. Leeching and cupping should be entirely confined to superficial areas, where, as I have previously said, there is a capillary connection beneath. But when blood-letting is practised for the relief of a deeply-placed organ like the kidney, the heart, or the lungs, then true venesection is the proper procedure. Not only is vene-

section a simpler and easier performance than leeching or cupping, but it is clear to you that no direct abstraction of blood from the kidneys on anatomical principles would occur from topical blood-letting. There are several conditions of general disorders indicating venesection. Perhaps some classification will be desirable, so that we can more or less systematise the practice. The constitutional states indicating venesection are, as I have previously said, the effects of inflammatory disturbance and also those maladies of the body which are of a non-inflammatory nature. Under this heading we shall be enabled, somewhat arbitrarily, to form an opinion as to conditions of the system requiring the lancet. The time when to bleed, the amount to withdraw, and the symptoms pointing out the value of venesection in a particular case, are very difficult to settle offhand. For, as in considering tracheotomy, there are a train of symptoms which vary in each case, and if not dealt with at the time may extinguish the candle of life. So that in attempting to tabulate diseases of a constitutional nature requiring the use of venesection, I must ask my readers to follow closely the phases of the disease. The value of venesection in one case may, or may not, on the prinicples of anatomy, physiology, or pathology, be a desirable course. The patient's condition may be so obviously hopeless that, like a gangrenous strangulated rupture, it is beyond retrieve. Yet there are many states of the system, coming under the heading of inflammatory or non-inflammatory disorders, which experience has told us are relieved if not cured by venesection. The operation is frequently an urgent measure, a last resource to save the system from suffocation and death. The responsibility is a great one, but the support of our elders in the past, and the present-day encouragement of many learned members of the profession, should stimulate us not to shirk a duty which is frequently as clear as the noonday.

To give you examples of the many instances of the beneficial and curative powers of venesection in the past, and as you will find recorded in the medical journals of our grandparents, would fill volumes. To attempt, likewise, to classify the inflammatory and non-inflammatory affections of the present day, which come under the heading of venesection, would seem equally hazardous. Yet

we may attempt some classification on a line which is distinctly plain. Whatever theory you hold with regard to change of type in disease, or whether you think that people are not as robust as formerly, does not affect the practice of blood-letting in our day, when we consider the main conditions indicating venesection. These are assuredly the same now as from all time, namely, obstruction of the heart's action. And if we think for a moment of these conditions, we shall at once see that they are denoted in many states of the system. The men who fought at Agincourt, and those of our countrymen who rode into the valley of death at Balaclava, are instances of no change of type theory, which Sir Samuel Wilks so forcibly alludes to in his work on nervous diseases. In the present decade we can again extol the prowess and vital endurance of the Englishman, as seen in Khartoum. So that we are inclined to think, if there is any change of type in modern man, it is the outcome of educational changes and high pressure. Yet admitting this and reviewing the physiology of asphyxia, are we not alive to the fact that there has never been a system or sound practice in the art of blood-letting. Men have been bled haphazard, without any foundation as to whether it was right or wrong. It has been applied carelessly, empirically, and without thought. Yet wonderful recoveries have occurred in the hands of those who have practised the art physiologically, and who have made it a speciality. Formerly there arose in the ranks of the profession a school of men who bled for every known disease. Discreditable as may have been this system of promiscuous bleeding, yet there is no excuse in our day for shirking the operation. We must acquire the art, and if we are not learned or skilled in the procedure of venesection and when it should be practised, either returning to school or seeking a consultation becomes indispensable for the safety of the lives we have charge of. Bone-setters and quacks of all kinds have always intruded themselves upon us, and have been the means of bringing disrepute upon the profession. I have previously remarked that society tends in this direction. If a living can be made out of selling drugs and other therapeutic agents, the profession of medicine has been long-suffering. The advertisements which fill current dailies are sufficiently pernicious to arouse the anger of the profession.

The sooner a stop is put to this wholesale infringement, including the compounding of drugs and the selling of "cure-all" remedies, the better. I cannot see the difference between an unqualified assistant and he who prescribes either from behind the counter or in an advertisement. No drug should be in a physician's prescription or permitted as a cure, unless it has a seat in the Pharmacopœia. If, as it appears, these are likely to rapidly swell the already congested market, surely a list could be presented periodically to the Colleges of Medicine for revision.

The states of the system denoting venesection are irregularly distributed in the text-books, so I will at once quote the words of Dr. Wilks from 'Lancet,' vol. i, 1891, p. 1139 :—"When you find the venous system gorged in primary affections of the lungs or in the secondary congestions, as in heart disease, or from paralytic conditions, as in apoplexy, you cannot be wrong in bleeding ; you relieve the venous system as well as the heart, and allow the circulatory apparatus to right itself. The objection sometimes made that the patient is too weak, as indicated by the pulse, is futile, since, owing to the small amount of blood which reaches the left ventricle to be propelled onwards, the pulse is naturally small." The late Dr. George Johnson, in his paper "On the Physiology of Asphyxia," read before the Royal Society in 1891, confirms this passage which you have just read. He was assisted by Mr. Charles J. Martin, who made numerous experiments on various animals. Some had their tracheas ligatured, others asphyxiated by the paralysing effects of curare, and a number were subjected to a gas containing no oxygen. Morphia, chloroform, and other anæsthetics were used so as to make the experiments humane. The objection to these benevolent drugs did not materially disturb the successful issue of these observations. In fact, it is stated that these anæsthetics did not interfere with the physiological results of the experiments. But since the action of these remedies is sometimes uncertain, perhaps some of us may be inclined to scepticism. However, the experiments are not new, for the phenomena can at any time be confirmed, namely, obstructing the air into the lungs of a fowl, and carefully using a stethoscope over the heart. The pulsations of the heart are increased at first, and they gradually become slower

and slower. If before the last few thrusts of the heart air is admitted, the comb, which had become cyanosed, will gradually redden again. The bird will regain consciousness and shortly afterwards stand on its legs. Should the suffocation be continued beyond a certain point, evacuation of the fæces occurs with involuntary convulsive movements of the whole body. This indicates implication of the nervous centres, but yet a vein may be opened and the convulsive seizure pass off. During cyanosis from asphyxia in fowls, one of the first signs is insensitiveness of the conjunctivæ, dilatation of the pupil, and blueness of the comb; the heart's pulsations gradually slow down, and later there is convulsive movements of the body and extremities. The very grit may be expelled from the gizzard in the fæcal evacuations, which are not uncommon in these convulsions. The immediate cause of death from asphyxia is the arrest of the pulmonary circulation, and this is confirmed beyond doubt. I have more than once corroborated Dr. Rutherford's experiments during the various stages of asphyxia: that first the pressure in the systemic arteries causes the left auricle to distend and then the left ventricle; subsequently a fall of pressure occurs and these cavities empty themselves. Later the right cavities of the heart distend, and the animal dies from failure or paralysis of the heart's action. This so-called acute asphyxia can be thus experimentally demonstrated, and if the hearts of fowls are examined immediately after the experiment, the distended right heart and the contracted left heart can be seen. Dr. Martin proved this conclusively by exposing the hearts of animals while under an anæsthetic. He found the right cavities became so distended that this enlarged side actually bulged throught the split sternum of the animal. The employment of the anæsthetics could not have affected the heart, causing this distension of the right cavities and contraction of the left. Before reading Dr. George Johnson's article in the 'Lancet,' vol. i, 1891, I had verified some of his observations.

A fancy cockerel was being killed by mistake. The neck was not broken, but the bird was in the last stage of asphyxia. There were convulsive movements of the limbs, the comb was blue, pupils dilated, and conjunctivæ insensitive. Placing the breast to my ear, I heard very slow

beatings of the heart. I took a small pocket knife, opened a vein in the neck, and held the bird by the legs with head downwards. After a few drachms of dark blood had escaped, the cockerel moved about and took a deep inspiration. While I was stitching the wound he got away out of my grasp. Next day he was in the harem as if nothing had happened. The wound was dressed for two or three days, and he grew up a fine bird. Had I opened an artery instead of a vein the issue would have been different; the operation relieved the distended right heart. I have briefly reviewed the subject from the physiological point, and now I have to deal with the pathological states of the system indicating venesection. These various states I propose dealing with in the next paper under the heading of " Illustrative Cases of Blood-letting."

Fevers in Children; their Significance, General Diagnostic Value, and Antipyretic Treatment.

—The 'Archives of Pediatrics' for April, 1899, has in it an article by S. S. Adams upon this subject which is of interest. In speaking of the treatment of fevers he tells us that this may be done by the administration of internal antipyretics, in the use of which great harm often occurs. It is true that by a good dose of antipyrin, acetanilid, or phenacetine, we can reduce the temperature and make the child apparently better. The parents are satisfied, and we may think we have accomplished something; but what is the result? The effect of internal antipyretics is transitory, and consequently we must resort to one of two things—either allow the temperature to return to its former height, or reduce it by the further administration of powerful antipyretics. In this way we not only confuse the diagnosis, but do much more, for such drugs exert a violent and paralysing effect on the heart.

Dr. Adams says he does not mean to decry the judicious administration of them, but he believes that antipyrin, in the hands of even the most skilful, is a most dangerous drug. He has seen the ill-effects of it, and the apparent good effects. He has seen a child wildly delirious from croupous pneumonia made rational by a dose of antipyrin, so that it could sit up in bed and chat with its parents, but he has seen the same child

relapse into a condition of high temperature within twenty-four hours, because the heart had never regained the tonicity which it had had prior to the violent reduction of the temperature by antipyrin. His experience with acetanilid is similar. With phenacetine he has had a little more favourable results. Of the internal antipyretics it is one of the safest, but it should be given judiciously, and only in those cases in which we require a rapid reduction of the temperature. Its administration should usually be accompanied by free stimulation. These antipyretics act in two ways, i. e. they lessen heat production and increase heat dissipation; and we must take this into consideration in determining the nature of the antipyretic to be given.

The second method of reducing temperature is by the external application of cold. This method is not only the most beneficial, but is the most stimulating to the various systems. It may be done by means of the cold pack, by the application of the ice-cap to the head, or of the ice-coil to the abdomen; but far beyond the beneficial effects of the wet pack and these other methods, the application of the Brand method, pure and simple, is unquestionably the best means of reducing fever, no matter what pathological condition exists. Dr. Adams says this without any hesitancy. He has no compunction whatever in taking from its bed a child having one of the infectious diseases, with a high temperature and accompanying nervous excitement, and placing it in a bath under proper conditions, for he believes that he is not only reducing the temperature but is placing the system in a far better condition than prior to the administration of the bath. The Brand method must be carried out in every detail. It is not sufficient to take the little one out of bed and place it in a bath-tub. The bath-tub should be brought to the patient, and the latter should be gently lifted out of bed and placed in the tub, and then the manipulations should be conducted during the bath, and the necessary stimulation given. The result is that the reduction of the temperature is effected with perfect safety.

Dr. Adams has demonstrated to his class in the Georgetown University a case like the following: A child of eight years, who was wildly delirious with typhoid fever, was placed in a tub containing water at a temperature of 90° F., and kept in this bath for fifteen minutes. Enough heat was dissi-

pated from that child to raise thirty gallons of water 4° F. This shows the immense amount of heat abstracted. The child, who was wildly delirious at the time the bath was begun, became conscious and rational; the pulse increased in force. Quite commonly the temperature rises after three or four hours to its former height, when the bath can be repeated.

In connection with the treatment of acute infectious diseases, Dr. Adams is repeatedly asked why we do not see so frequently the complications and sequelæ commonly observed in former years. When he began to practice medicine, as soon as a child was attacked by one of the eruptive diseases he was isolated, and every crack in the windows of the sick-room was sealed. A blanket was placed over every door but one. The child remained in that vitiated atmosphere from the beginning to the end of the disease, with the result that there was a continual inhalation of a vitiated and germ-laden air. Twenty years ago, to give a drink in such a case was equivalent to the physician receiving his passport, so far as that household was concerned. In private practice the complications of scarlet fever, and the post-scarlatinal conditions, are now much less frequently seen than they were ten or fifteen years ago. It can be attributed not only to the freer use of water and better ventilation of the sick-room, but also to the practice of placing such fever patients in baths when the temperature requires reduction. Such treatment favours the elimination of the toxic material, and as a result convalescence is more rapid and smooth, and the complications and sequelæ are avoided.

The temperature of the bath varies considerably in different cases. With a temperature of 105° we should be very careful how we reduce the temperature of the bath below 95°, the books to the contrary notwithstanding. If we can accomplish what we desire by a warmer bath, and with less inconvenience and discomfort, why should we use a colder one? Some advise a bath at 60° or 55° F., and some even a bath at 50° F. Dr. Adams claims that just as good results follow the use of a bath having a temperature of 95° to 100°, provided a cold cloth is applied meanwhile to the head. The ordinary duration of a bath is ten minutes, and during this time the patient should be subjected to continuous friction. He says he should hesitate a long time before giving his consent to a fever patient receiving a bath at 55°. The city water probably has a temperature of about 50°, so that the effect of such a bath on a normal temperature can be readily tested by jumping out of bed into water just drawn from the faucet. He is confident that if this is tried a verdict will be rendered in accordance with what he has said.— *Therapeutic Gazette*, August, 1899.

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* Specially reported for The Clinical Journal. Revised
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WITH MR. HOWSE IN THE WARDS OF GUY'S HOSPITAL.

GENTLEMEN,—This boy has very extensive lupus
of the foot, more especially affecting the sole. It
is not very common to find the foot so extensively
affected. The condition has recurred a great
many times, notwithstanding that it has been
scraped thoroughly and nitric acid applied. On
this recurrence I proposed amputation, but the
parents thought they would like to have another
attempt made at saving the foot, and so it has been
scraped again, and nitric acid has been reapplied.
You will see that the disease is very extensive, and
I am afraid the ulceration has gone very deeply.
It is an ordinary case of lupus vulgaris,—not one
of the more peculiar forms. In the belief that
iodoform is pernicious to the tubercle bacillus you
will see that it has been used here plentifully. It
is said that there is now less discharge. The boy
says he has had it treated four times in this hos-
pital before, and once at home.

You will notice that on his legs there are curious
pigmented, reticulated marks, symmetrical on both
legs. It is met with a good deal in persons who
sit before the fire, and is called "ephelis ab igne,"
which is really a misnomer or contradiction in
terms, meaning, as it does, "sunburn from the
fire." The pigment is probably derived from the
broken-down colouring matter of the blood, and
is lodged in the cutis. In the black man the
pigment is in the conical cells of the rete Malpighii.
We know that this coloration is due to pigmenta-
tion, and not to mere congestion of the blood-
vessels, because it does not disappear on pressure.
If it were a mark due merely to over-fulness of the
vessels, pressure from the finger would empty them,
and the dark coloration would vanish. But you
see it remains permanent. The reticulated pattern
of the marking is probably due to the pigment
being deposited along the course of a network of
venous channels in the cutis.

This next patient is a man aged fifty-two, who

had a small strangulated femoral hernia. We found at the operation a very thickened sac, indicating that the hernia had been down a long time. At the bottom of the sac was a very small knuckle of intestine, so that it is probably a "Richter's hernia," in which form only a small portion of the calibre of the intestine is in the strangulated hernial sac. Thus the lumen of the bowel remains partially patent, and therefore there is no absolute obstruction. The material most commonly passed is fluid and flatus. Only flatus was passed here. If one had the choice, I think one would rather have a hernia of the whole calibre of the intestine than a Richter, because while fluids and flatus pass, obstruction is not complete, the symptoms of strangulation are not marked, and therefore it is only late in the disease, when gangrenous ulceration of the bowel and general peritonitis have set in, that the patient seeks advice. The probability of a fatal result is therefore much greater. Here we have fortunately operated early. There is reason to believe that in this case the obstruction was complete as far as fluids were concerned, because he had not passed anything for two days except flatus; and at the operation, within a few minutes of the release of the strangulation, the patient passed a most abundant evacuation of fluid fæces (about half a gallon); and within the first hour after the operation three other evacuations of the same character, but less abundant, took place. This could only have occurred through the release of the strangulation, and therefore through the bowel being made patent by the operation.

In these cases of femoral hernia we now always attempt radical cure of the hernia after the reduction of the intestine. This is done by separating the sac all the way round from the surrounding tissues, applying a ligature to its neck, then cutting off the sac just below the ligature. The stump is then pushed into the crural canal as far as possible, and the skin wound closed with salmon-gut sutures.

The next patient is a man aged fifty-nine. He had a large melanotic sarcoma in the groin, which started from a small tumour in the skin on the inner side of the groin. This had involved the superficial inguinal glands and also one of the glands lying deep in the pelvis between the peritoneum and the pelvic fascia. The dissection of this gland was very difficult, and I had finally to put a ligature round its deep vascular connections and cut it off, dropping the ligature into the wound. I then closed the superficial wound without leaving any drain in it. This I afterwards regretted; it was trusting too much to primary union in a patient so feeble as this one was. Union at first took place, and as there was no rise in temperature we thought things were going well. But some hæmorrhage subsequently took place into the deep part of the wound, and the skin incision separated. A good deal of broken-down blood and pus came away, and we had to wash the wound out. It then slowly granulated up from the bottom, and ultimately did well. I am inclined to think it would have been better policy to have packed the wound from the first until all tendency to hæmorrhage had ceased, and healthy granulations had appeared. In all these soft sarcoma cases there is a great tendency to hæmorrhages. This militates against primary union, and generally requires the use of a drain.

The next case is that of a boy aged eight, who has a tumour on the right side of the abdomen, some distance above Poupart's ligament. It is much larger when he is walking about, but some of it can be reduced with a slight gurgle, so that part of it is undoubtedly hernia of intestine. A considerable mass remains irreducible, however, and the nature of this mass is the question for diagnosis. There is no testicle in the scrotum on the right side, but there is on the left, so the swelling may have something to do with an undescended testis; if so it is very much larger, harder, and higher up in the abdominal wall than usual. It is elastic and uniform in its contour, and too deeply placed in the abdominal wall to examine for translucency. We shall discover what it is when we explore, but I think it is probably misplaced testis enclosed in a tunica vaginalis containing fluid (hydrocele); or there may be a hernial sac containing omentum with the testis in some unascertainable relation to it. These misplaced testes generally have no capacity for producing spermatozoa, and should be removed as soon as they give rise to inconvenience, as they are rather frequent sources of trouble hereafter. In this case there is no question about the importance of operation, on account of the size of the tumour and the undoubted co-existence of a hernia with it. By the operation we shall effect

a radical cure of the hernia, and if the diagnosis is correct we shall take away the testis as well.

[*Note.*—At the operation the tumour was found to be misplaced testis enclosed in a tunica vaginalis containing a considerable amount of fluid. The aperture in the abdominal wall through which it had passed was at least two inches above the position of the internal abdominal ring. Associated with it was a hernial sac containing adherent omentum. The testis itself was a small deformed one with a very large unravelled epididymis, with cysts in the latter. It was removed, the omentum cut off and ligatured, and the aperture in the abdominal wall stitched up. The patient left the hospital well in about three weeks.]

This man, aged twenty-two, has had nephrotomy performed, or perhaps I should rather say an exploratory operation about the kidney. The patient was very tender in the region of the kidney, and had many of the signs of stone in that organ. We explored the kidney very thoroughly, but could not find any stone, though I passed a needle into its substance in several directions. We accordingly closed the wound up, and the result is that the pain about the region of the loin has vanished. All that remains now is an occasional smarting when he passes water, probably due to uric acid in the urine. The explanation of the relief given by operation in such a case as this is somewhat difficult to understand. Such cases, however, are not very uncommon, and many surgeons have had a similar experience. In two cases with which I am acquainted the relief appeared to be due to cicatricial tissue forming about the kidney after the operation, and thus fixing it more firmly in its position. Neither of these cases, however, were cases in which the diagnosis of floating kidney could be made before the operation.

This boy, aged fourteen, has had a Stokes-Gritti amputation performed. That is the form of amputation at the knee-joint which is mostly seen in Guy's. A long anterior skin flap reaching from above the condyles down to the tubercle of the tibia is first cut. In reflecting this flap the ligamentum patellae is cut through and the knee-joint opened, the flap being thrown upwards with the patella in it. A section is then made through the patella from above downwards, removing the posterior or cartilage-covered surface of this bone. The posterior flap is then made, the skin incision

being carried nearly as low as the anterior to allow for retraction. The muscles are cut through opposite the joint, and separated from the bone to just above the level of the condyles. The femur is sawn through in its broader part just above the condyles. The section of the patella is then turned up against that of the femur, and united with it by a suture or ivory peg. This produces an extremely good stump, which admits of weight being borne upon the end to a certain extent. The cicatrix becomes placed posteriorly from retraction of the muscles in the posterior flap. Thus the skin just over the lower part of the patella (the kneeling skin) corresponds with the end of the stump, and enables it to stand a certain amount of pressure. This case has healed up with great rapidity. The operation was performed a little over three weeks ago ; he has been well for a week, and the patella has united with the femur. The stump which ensues is not at all clavate, as in most amputations at the knee-joint, and is therefore very advantageous for the instrument maker to fit an artificial limb on to. The weight of the body in such a case as this is distributed between the end and the sides of the stump, whereas in an ordinary case the sides have to bear the whole of the burden ; this sometimes causes a good deal of inconvenience from dragging upon the cicatrix.

The next patient is a man aged forty-one, on whom Syme's external urethrotomy for stricture was performed yesterday. There was a good deal of tendency to hæmorrhage, as there usually is where, in addition to the stricture, the prostate is also at fault. In dressing him after the operation the catheter was by mistake not fastened in, and it came out this morning with a rush of urine and could not be got back again. The dresser and house surgeon made some attempts to replace it, but naturally an incised urethra is somewhat tender, and they failed. This emphasises the importance of fastening the catheter in for the first few days in all the more complicated cases. As he is somewhat sore from the attempts, and as he will pass water quite well without an instrument for the next twenty-four hours, we will leave him at rest to-day and pass a catheter to-morrow.

This man, aged fifty-four, comes in with a large gelatinous sarcoma of the foot. He has been in before, when it principally affected the dorsum of the foot. We then attempted to excise it, but it

extended between the metatarsal bones into the sole. It was impossible to excise this part cleanly, so we scraped it out with the sharp spoon, and then plugged the cavity to control the bleeding and to make it fill up with granulation tissue. This it did, but at that time we were uncertain of the nature of the growth. It is now pronounced to be round-celled sarcoma, and there are undoubted signs of recurrence both on the dorsum and in the sole, especially on the former. We shall have to amputate, and the question is what amputation we ought to do. Under ordinary circumstances a Syme's amputation at the ankle would be the right one to choose, but it is out of the question here on account of the excessively bad tissue about the ankle-joint and leg from old varicose ulceration, from which this man has suffered. He will have to make up his mind to an amputation much higher up—above all this diseased tissue. Practically the question lies between an amputation at the "place of election,"—where I think I might perhaps get just enough sound tissue,—and one of the knee-joint amputations. I believe I shall choose the latter as being safer in this case. You will notice that there are no signs of secondary disease.

The age of this man is sixty-nine, and he comes with a big ulcer round the leg just above the ankle. Diseases are generally classified according to their etiology, and in the case of ulcers there are syphilitic, varicose, cancerous ulcerations, and so on. There is another classification of ulcers, viz. according to their anatomical peculiarities; for example, there is the healing ulcer, the indolent ulcer, the weak ulcer and the irritable ulcer, and many others. You all know the healing ulcer with its small, red, florid granulations, discharging laudable pus, its surface up to the level of the surrounding skin, and its advancing edge of bluish epithelium or epidermis. Then there is the weak ulcer, where there are large, pale, shiny granulations projecting beyond the level of the surrounding skin, often called "proud flesh." In the case now before us the surface of the ulcer is depressed below the level of the surrounding skin. The surface consists of greenish brown, sloughy material, with just an island or two of granulation tissue mixed with it. This material is really dead and degenerating granulation tissue and inflammatory lymph. The discharge from the ulcer is not purulent, but consists of yellowish serum. The character of the edge is well marked; it is hard, thickened, sharply defined, not painful, but with a callous margin; in fact, we have all the characters which go to make up an indolent ulcer. These ulcers may last for years. The patient has already had this for several years. He is not an in-patient, in fact he refuses to come in; but being a relation of one of our employés, he often comes to the hospital for advice. Like many other people, he likes to have his own way. He listens to what everybody says, and then goes home and does what he pleases. I told him to stay in bed, but he has only done so very partially. He is not now following any occupation. I now recommend warm boracic fomentation to be applied four or five times a day; this will keep it antiseptic, and promote the formation of healthy granulation, and then when the ulcer is in a more healthy condition a skin-grafting may be done with advantage for him. If he were to rest it entirely it might be well in about two months. Of course there would be some tendency for it to break down again when walking about, but that risk may be minimised if he takes due care of himself. In view of the possibility of there being something specific about it, I gave him some biniodide of mercury at one time, and there would be no harm in giving him some again now, as it may help the absorption of the indurated edge and facilitate the healing.

In a case of exceedingly chronic ulceration like this, perhaps I ought to say something about the oxygen treatment of ulcers. I believe it is claimed by Dr. Stoker that the cicatrix left when the ulcer is treated by oxygen is more permanent than when treated by other methods, and if that is so it would be worth trying it. I have no personal experience if this be true or not, and I think it would be somewhat difficult to prove, because ulcer cicatrices break down from such very different causes, and at such different periods, even in the same patient. But my own impression of oxygen, locally applied, is that it is only a very useful form of antiseptic, and I believe equally good results are obtained by many other antiseptics, plus rest. It is most important to do everything we can to produce a good scar, especially for ulcers in the leg, where the new tissue is very liable to break down when the patient begins to walk about after a long period of lying down.

One cause of rapid breaking down after the ulcer has skinned over, is that often the new skin forms over very unhealthy granulation tissue ; such new skin is nearly always very thin and weakly formed. It is often good policy, when commencing the treatment of a chronic ulcer, to destroy the whole surface with some escharotic, so as to compel the tissue below to throw out new and healthy granulation tissue as the eschar separates. The new skin will form much more rapidly and permanently over this new granulation than over the old ulcerated surface. Another cause of breaking down arises from impeded venous circulation above the cicatrix, as from varicose veins, or from various constitutional troubles. The former (the varicose veins) may often be cured by operation, and this contributes greatly to the stability of the cicatrix. This venous impediment is the reason why elastic support, as from elastic stockings, Martin's elastic bandages, &c., is so often of use in preventing an ulcer breaking down after cicatrisation. However, if in most cases it could be definitely proved that the oxygen cicatrix was less likely to break down than others, I should not hesitate to employ it.

You will remember we saw this patient with melanotic sarcoma of the pelvis two or three days ago. Creolin has been used here for the dressings, and you will notice it has irritated the skin somewhat. I think boracic dressing is preferable; it is not such a strong antiseptic, but it does not irritate. In the operation we rather imprudently united Poupart's ligament with deep sutures to the muscle above it, and the skin incision with superficial sutures without using any drain ; and as these melanotic sarcomata tend to bleed a good deal, I am afraid some hæmorrhage occurred in the pelvis underneath the deep suture. Anyhow the wound did not heal primarily, and must now fill up with granulation. The patient has no constitutional symptoms; his temperature varies but little, and has been for the most part 99°. He will now have boracic lotion fomentations, changed every four or five hours.

The next case is one of piles in a man aged forty-two, who is progressing very well. With regard to this patient, I should like you to observe that he has had a posterior proctotomy performed, in addition to the usual piles operation. The anus was very small and contracted, and I always

make this addition to the operation in such cases, because it facilitates the early actions of the bowels, and causes them to be performed with comparatively little discomfort. It heals up very rapidly, and in no wise interferes subsequently with the action of the sphincter. The sphincter is not cut across in performing the operation ; only the fibres springing from the coccyx separated. These subsequently unite in the healing process, and the function of the sphincter becomes as good as it was previously.

This young man, aged twenty-one, is a very tubercular patient ; the tubercle has especially affected the knee, which was so much disorganised that it was doubtful whether excision of the joint would be successful ; but we tried it, and he has done exceedingly well, in fact it healed in about four or five weeks, and since that time he has had on a silicate splint. To-day, for the first time since the operation, he will try and get about with crutches, with the foot slung up at first. At so early a period after the operation as this, we cannot expect the union of the bones to be very strong, and it would be highly imprudent to allow him to attempt getting about without artificial support. I have known patients who have tried to get about even at the end of three months, without artificial support, who have developed a painful condition of the part which has thrown them back a good deal.

We have in the wards at present, three patients suffering from stricture of the urethra. They all present rather different aspects of the complaint, and may be advantageously compared together. The first is a man aged forty-two, who has been treated by simple dilatation. We have dilated the stricture up to the size of a No. 10 English catheter and there seems every prospect of our being able to complete the dilatation in this way, without resort to any cutting operation. The only check we have sustained is that his urine was neutral on Saturday, and to-day has become alkaline for the first time. When the urine becomes alkaline in these cases, the question always arises, what has caused it. Cystitis is the general cause, and the use of the catheter itself, in spite of all the antiseptic precautions taken with it, is not unlikely to produce it. In all these cases in which the catheter is fastened in the bladder, we use antiseptic bladder washes once or twice a day as a routine

measure of prevention, but here it has come on in spite of this. In such cases, withdrawal of the catheter generally allows the cystitis to subside. We then pass the catheter once a day, wash out the bladder, and withdraw it again immediately. This nearly always produces a satisfactory result, and might be adopted from the beginning, but it is a much slower proceeding than fastening the catheter in.

The next patient, aged forty-nine, had a stricture of the urethra, which was being treated by dilatation. My house surgeon had dilated up to a No. 8 catheter; but the day following this, matters went back again, and he could not get in any instrument at all. He has some old false passages about the urethra, which were made in attempts at catheterism outside the hospital. These false passages have become inflamed, probably from our attempts at catheterism, have swollen up, and so completely closed the channel. Therefore, the other day I performed a perinæal section, and then passed a catheter along the whole course of the urethra. I often have attached to the plug in the catheter two or three inches of catheter wire, which tends to keep the catheter stiff and prevent it slipping out of the urethra,—bellying out, we call it, because it bends out with a great convexity between the point where it is fastened and the meatus. If that is not done, the tape fastening the catheter should be tied very close to the meatus. The bladder is being washed out, and the urine comes away quite readily. The form of perinæal section we have adopted here, is what is known as Syme's urethrotomy, because under chloroform we were able to get into the bladder a Syme's urethral staff. The operation becomes in such cases very easy, because it is simply making an incision on to a groove in a shouldered staff. In this operation a linear section is made through the stricture for a distance of about two inches, and a large catheter at once is introduced, so that the stricture does not contract again. Besides that, the drainage from the perinæal incision allows time for the false passages to get quite well.

It should be observed that I do not generally advise dilatation of a urethral stricture by instruments in cases where false passages are known to exist. Perinæal section is in these cases very much better treatment; but my dressers and house surgeon commenced the dilatation as routine

treatment before I saw the patient, and did not themselves know of the existence of the false passages until difficulties were met with, when the patient confessed that he had been in trouble in this way some twelve months previously.

The third case is a man aged forty-one, who also has had Syme's urethrotomy performed, and we fastened a catheter in the perinæum. This was rendered necessary because the urine was so very thick and foul, that I thought perinæal drainage would be best for the patient for a few days. But after the operation some gradual oozing of blood took place into the catheter, gradually blocking it up, so that the drainage from the bladder does not now take place effectually. In addition rather a large mass of dressings was used to exercise pressure on the perinæum and stop the oozing, so that probably the catheter has slipped a little out of the bladder. When there is no hæmorrhage from the perinæal wound or after the oozing has ceased, I often treat these cases without any dressings at all, because the wound is very small, and if it is kept pretty frequently cleaned and washed there is no necessity for them. We can regulate the length of the catheter then very much better. When I take this catheter out you see that it is coated with a very considerable amount of phosphate, even though it was only put in three days ago. This is due to the very foul and ammoniacal condition of the urine. I will now pass another new catheter and we will wash the bladder out thoroughly, and only use a couple of thicknesses of boracic lint against the wound, and we shall not then have a great mass of dressings to drag upon the catheter. I expect that it will drain properly now that there is no blood-clot in it.

Here is a man just admitted, fifty-three years of age, who complains that when exerting himself he has a pain in his perinæum and under his scrotum. On questioning him we find that his water sometimes stops suddenly while micturating, and that after doing hard work he passes small specks of blood, which do not float but are entangled in mucus. He also frequently has pain at the meatus urinarius while micturating. The urine is of a light colour, and not offensive. He has been complaining of these symptoms for the last four or five months. All these symptoms, as you know, point to stone in the bladder, and he tells us that he has already had one stone removed, two years ago, by

the supra-pubic method; of this we can see the
scar. His prostate is also a little enlarged on the
right side. You know that there are various forms
of stone found in the bladder; the three common-
est are oxalate of lime or mulberry calculus, uric
acid either free or in combination with soda or
ammonia, and the triple phosphate calculus, *i. e.*
the phosphates of ammonium, magnesium, and
water. To make a diagnosis of the nature of a
stone before it is extracted is generally a matter of
considerable difficulty; you have only the hard-
ness and the size of the stone, as well as some in-
dications derived from the condition of the urine
and from the history of the patient, to go by. On
introducing the sound I found that the stone is
felt with difficulty, *i. e.* it is lost sometimes and then
felt again, so it is not of large size, probably about
half an inch in diameter. Next we have to take
into consideration the softness of the stone, which
is judged by the ring and by the sensation which
it communicates to the sound. There are three
varieties of ring which you get: first, a ring almost
as distinct as that produced by striking one metallic
body with another; secondly, one less distinct than
this, but still very recognisable; and thirdly, one
which is hardly perceptible. Notice that we have
here a stone of medium hardness; this is in favour
of its being an urate. The duration of the sym-
ptoms also tends to confirm this. An oxalate is
usually of slow formation, and produces symptoms
early, from its hardness and the rough tubercu-
lated character of the surface. Four or five
months' history would be a short one for a calculus
of this size. He has had, too, very little hæmor-
rhage, whereas oxalate stones generally produce
more. Both these last observations, however, are
subject to many exceptions. You will notice also
that the urine which came away while I was pass-
ing the sound was quite clear and acid, a point
very much against the likelihood of the existence
of a phosphatic stone. Hence I expect we shall
find it is a uric acid or a urate calculus.

[*Note.*—This calculus was extracted a day or two
later by the supra-pubic operation, and proved to
be a uric acid calculus, about five eighths by three
quarters inch in diameter. The patient made a
very rapid recovery.]

This young woman's case is a peculiar one.
She says she had a penny in her mouth while
crossing the street, and was almost run over by a
cab. In running to avoid it, she managed to
swallow the penny. She was brought in here
shortly afterwards; there was then very great
stridor in breathing and blueness of the face, and
it was thought that the coin had gone into the
larynx or into one of the bronchial tubes. There
also appeared to be some deficiency in respiratory
murmur on the left side of the chest. I did not
see her till the day after her admission, when it
was reported to me that, though better, she was
liable to paroxysmal returns of the dyspnœa.
Therefore I thought it would be well to open the
trachea; this was done, and I examined, with a
long curved forceps, quite down to the bifurcation
of the bronchi and upwards towards the glottis. I
could not find the coin, nor could I get any
metallic ring when the long gunshot probe was
introduced into the left bronchus. So we put a
tracheotomy tube into the wound and closed it.
She became better, and the tube was removed
about forty hours after. She has had no return of
the symptoms. Two or three days afterwards she
passed *per rectum* two halfpennies and a farthing,
which, it appears, she had swallowed some time
before, so that she seems to have been in the
habit of doing this performance. The penny has
not yet appeared. On Friday she had some pain
over the ileo-cæcal valve, as if the coin was causing
some irritation in this part of the intestine. I
think the penny must have gone down the œso-
phagus and into the stomach. Probably on ac-
count of its size it passed somewhat slowly down
the gullet, and when opposite the root of the lungs
irritated the vagus nerve branches about that
region, and thus produced the severe symptoms
for which she was admitted. We are giving her
dumplings and solid food of that nature, in the
hope that a concretion will be formed around the
coin and that it will thus be passed in the ordinary
way. Skiagraphy failed to help us in this case.

[*Note.*—This young woman went out apparently
well; the penny, however, had not been passed.
She returned five or six times in the course of the
next three weeks with alleged return of her sym-
ptoms. She was readmitted once or twice, but
my house surgeon and dressers never saw any
difficulty in breathing or any other severe symptom
on these occasions. They finally came to the
conclusion that she was either very hysterical or
else malingering. She was a foreigner, speaking

very little English, and may be known at some other of our metropolitan hospitals in the same way. There does not seem, however, any reason to doubt the reality of the symptoms for which she was first admitted.]

This young woman, aged about twenty-three, has had tuberculous disease of the right hip-joint for the last seven years. She was at first treated at her own home with rest in splints for a prolonged period, and appeared to get better, so that she was able to get about again on the limb, although it was always stiff. Some centre of mischief must, however, have been left about the os femoris and acetabulum, for about a year ago the pain returned, and by degrees an abscess formed, which gradually assumed an enormous size, so that when admitted it was covering the whole trochanter major and the outside of the hip. On manipulating the limb there was grating in the articulation. I excised the head of the femur by the posterior operation. In doing so an enormous quantity of very old, thick, caseous pus was evacuated. The head of the femur was disorganised, and there was some caseous disease of the acetabulum, which was scraped out. The operation was a very difficult one on account of the enormous thickening of the fibrous tissue (representing the capsule), which always takes place in the adult cases treated many years previously by prolonged rest. This thickened fibrous tissue represents the attempts at repair undertaken by nature for the healing of the tuberculous joint. It is too often rendered fruitless, as in this case, by the persistence of tuberculous centres about the bone. After excision the temperature went down and the wound granulated up. There is now, unfortunately, fresh mischief about the scar, which, from the healthy appearance of the granulation tissue during the healing process, we did not expect. Perhaps, however, we were unduly sanguine about the result, considering the enormous extent of the tuberculous abscess when first admitted. We shall have to scrape it out again, and treat the cavity with some iodoform preparation.

[*Note.*—This was done; the cavity again granulated up very healthily. At the present time she has gone home with no sign of fresh trouble. The patient, however, comes from a very tubercular stock, and we must not be too certain about the ultimate event.]

This young girl had double pes cavus and double talipes equinus, the result of an old infantile paralysis. We divided the plantar fascia and tendo Achillis in both feet, and it was put up directly afterwards with an antiseptic dressing, bandaged with a wet lysol bandage, the whole being covered with plaster of Paris, so as to retain it in right position. The wet bandage appears to have contracted in drying, so as to exercise too much pressure on the foot, which became cold, with blebs forming on it. Hence we had to take it down somewhat hurriedly on the third day, before we had intended to. A fresh dry dressing was applied, and the foot retained in position by strapping. The circulation speedily recovered itself, so after a few days it was again put into a plaster-of-Paris case, and it is now doing very well indeed.

This little baby, aged about five months, has a very severely burnt scalp, from a paraffin lamp accident. Over an area of about five square inches the integument is completely destroyed, and in a large portion of this extent there is reason to fear that the burn has penetrated to the bone. Though a case of this kind looks at first sight pretty hopeless, yet we should not by any means despair of saving the child. The worst case of the kind I have ever seen was in a man who was very much addicted to alcohol. He came home one evening very drunk, but managed to light a paraffin lamp, and he was proceeding to walk upstairs carrying this lamp when he tripped and smashed the glass reservoir of the lamp. The oil caught fire, and he, in his drunken condition, fell back upon a burning pool of oil and remained in it until he was pulled out. When he came to the hospital the whole of his scalp was absolutely burnt and charred, from the occipital protuberance following a line just above the ears, the upper parts of which were burnt also, to a point about an inch above the eyebrows. The whole of the integument and the pericranium in this extensive area were absolutely destroyed, and the bone itself charred ; in fact, it looked like a case of scalping by Indians, only done by fire instead of the knife. I thought it was quite impossible for him to recover. However, he managed to get slowly round from the shock of the burn; antiseptic dressings were kept carefully applied to the injured area, the slough very slowly separated, and little islands of granulation tissue began to appear in the exposed bone. By degrees superficial plates

of bone began to exfoliate from the top of the head. Over a large part of the area the integument was so burnt with the bone that it only separated with the necrosed bone.

Two years elapsed before the condition was cured, and it speaks volumes for the efficacy of the antiseptics employed and for the care and attention which successive generations of dressers and house surgeons bestowed on him, that at no time was there any septic inflammation of the bone. If such had supervened, his life would have been in great danger, and trephining would have been necessary. During the course of the treatment numerous skin graftings were periodically performed, and we owe it much to this that we were able finally to cover the whole of this extensive area with skin. This new skin subsequently contracted very much, and pulled up some small remains of hairy scalp from about the region of the ears, so that although the whole of the top of the head is absolutely bald, he now presents a very respectable and rather venerable appearance.

This little child will also be bald over the burnt area. We must be careful that while the antisepticity of the dressings is carefully maintained for this little one, they are not sufficiently irritating to produce a condition of eczema. If septic inflammation of the bone were to ensue we should have to trephine, but with great care it will very likely do well.

[*Note.*—This case subsequently recovered.]

The two next cases are patients on whom excision of the knee has been performed for tubercular mischief. The first is a girl aged ten, in whom the operation was done six weeks ago. Everything has proceeded quite satisfactorily, and the wound has now quite healed; but we still keep her in bed, to allow time for the bone to consolidate. You will notice the arrangement of the splint and cradle, by which comparatively free movement is allowed to the patient during the whole of the treatment. The second case is a girl who has had tubercular mischief about the knee and most extensive lupus about the face. I show you a photograph of the condition of the face before we commenced treatment, by which you will see it was very pronounced indeed, and involved a very large portion of the right side of the face. It might be called lupus hypertrophicus, as the lupoid granulations projected some distance beyond the

surface of the skin. It has been scraped three times, and you will notice the immense improvement in the condition. When admitted she also had complete backward dislocation of the knee-joint from old tubercular trouble, and we have tried to get this right by excising the knee-joint; but we did not succeed in this, so we had to amputate. The operation was done five weeks ago, and there is already a great improvement in the girl's health, but it is too soon yet to say whether we shall succeed in obtaining a complete cure.

This woman, who is six months pregnant, was admitted for very extensive varicose veins in the legs; these were so bad that there was great fear that they would burst through one or two points of ulceration over them; therefore on Friday last I operated upon them. You know that if there is any tendency to varicosity, pregnancy is a serious exciting cause, and under its influence the varicosity becomes very much worse. Directly the pregnancy is over there will in all probability be a decided improvement in her condition. For this reason I do not generally advise operation on varicose veins in pregnant women. It was only the obvious risk in this case of leaving them untouched, that induced me to do so. She has borne the operation well, and will now be much the better for having had it done.

The next patient is a woman aged thirty-four who has double breast trouble, the diagnosis of which is somewhat doubtful. The left breast has been affected for ten years, and the right one eighteen months. There is a hard lump in each breast, though the left is considerably worse than the right. Both breasts are small and very little prominent; there is a shallow sinus and some scar tissue about the left breast. Both nipples are retracted, and there is axillary glandular enlargement on both sides, but not in any large mass. These conditions are found both in tubercular disease of the breast, and also in specific mammitis. It was sent in as a case of tubercular disease, and I think this diagnosis is very likely to be right. Carcinoma is not likely; although there is retraction of both nipples, there is no very marked tumour growth in the breast. There are also glands in both axillæ, but not of such size as we should inevitably get after a ten years' duration of the growth; indeed, the ten years' duration is

itself a condition against the diagnosis of carci-
noma.   As regards the diagnosis of tubercle, she
has no cough and has never spit any blood, but
she states that she has got rather thin during the
last year or two.   Her mother is living, and her
father died of Bright's disease.   Her brothers and
sisters are all well.   She does not know of any
consumption in the family.   There are no physical
signs of phthisis about the lungs.   Hence there is
no great support for the tubercular diagnosis in all
this.   As regards the theory of its being a specific
mammitis, there is no history of syphilis, but she
is married, has one child, and this trouble came on
in the left breast shortly after its birth.   I do not
say that this offers any strong support to the theory
of its being a specific mammitis, but I thought it
advisable to try the effect of a course of biniodide
of mercury upon her before adopting any operative
proceedings.   Under its influence there has been
marked diminution in size, which has now been
for some time at a standstill, and so there now
again appears the question of operation.   Taking
everything into consideration, I have decided to
remove the left breast, which is the most damaged,
and in such a state as to make it impossible that
it can ever be useful again.   We shall then have it
examined microscopically, and the diagnosis once
for all definitely settled.

[*Note.*—This was done a few days later.   The
entire left breast and axillary lymphatic glands were
removed.   The glands had caseating centres, thus
strongly confirming at the operation the tubercular
theory.   The diagnosis was, however, definitely
settled as tubercle by microscopical examination a
few days later.   The operation wound healed up
very well, and as the probability was in favour of
the same diagnosis on the other side, and as the
patient wished it very strongly, I performed the
same operation here also.   This also had the same
satisfactory termination.]

This little child has what looks at first sight like
tubercular foot, and there is also a crescentic
strumous ulcer on the cornea.   On examination,
however, it appears that the integument of the sole
of the foot and the soft parts immediately
below are the parts principally affected.   If
there had been any mischief about the bones
the child would have been in much greater pain
than she is.   I think this is a case which should be
treated at first medicinally.   I always advise a

course of cod-liver oil and a little mercury, either
Hyd. c̄ Cretâ or by inunction.. I should not think of
proposing any operation until the former has been
fairly tried.   This is the more important in that the
disease is of very short duration, and I have seen
many such cases get quite well by medicinal treat-
ment alone.

This woman, aged fifty-eight, has had a modified
Kraske's operation for removal of the rectum per-
formed.   The rectum for the lower six inches has
been removed for very extensive villous disease,
giving rise to severe attacks of hæmorrhage at
times, and to enormous mucous discharges at
others.   She thus became so weakened that life
was a misery to her.   The operation was performed
by cutting across the sacrum at the last piece,
removing it and the coccyx, but leaving just the
anal circumference and external sphincter.   We
pulled down the upper sound portion of the bowel
and united it by suture to the anal circumference.
She had a preliminary colotomy done, so that she
passes her motions entirely through the colotomy
wound.   She is now taking her food well, and is
comfortable.   We have had, however, a very diffi-
cult time with her, not from any difficulty with the
operation or the treatment, but because the patient
had beforehand made up her mind that she was
going to die, and nothing would persuade her to
the contrary.   She has now, however, got that
notion out of her head, and can smile at it, as you
see.

[*Note.*—This case went out ultimately quite well.
The colotomy wound was, however, at her own
wish left open.   She had got used to managing it,
and did not wish to submit to anything further.]

The next case is one of Furneaux Jordan's
amputation for old tubercular disease of the hip in
a girl twenty-four years of age.   Her limb was
flexed, adducted and rotated inwards—the most
extreme condition of dislocation possible.   There
were also numerous sinuses present, leading down
to diseased acetabulum (with abscess inside pelvis),
and to carious disease of the head of the femur.
The sinuses had existed for many years before
amputation, and they were of course septic, so we
must not expect to cure the condition too quickly.
I advised her to have the amputation done
seven years ago, but she declined.   The disease
about the os innominatum, the septicity of the bone
and the sinuses, and the fact that she has a certain

amount of albumen in her urine, suggesting the possibility of some lardaceous disease, are the principal difficulties in the way of getting her well. She has, however, greatly improved since the amputation.

This child had a nævus over the bridge of the nose and extending into the orbit. There was scar tissue over it, as if some attempt had been made elsewhere by means of superficial cauterisations, or the electric cautery, to treat it. I excised it and brought the skin together. I left a little nævoid structure dipping down into the orbit, because I was afraid of injuring the lachrymal sac ; but it is consolidating, as you can feel, and I have no doubt will ultimately disappear.

The next patient had six ribs fractured in an accident. He was therefore very rightly kept in hospital. I always advise that patients who have more than two or three ribs fractured should be kept in hospital, because there is great danger of the fractured ribs puncturing or injuring viscera. I remember one case many years ago in which a man walked into the hospital after having some ribs fractured ; he was treated and walked home afterwards. But next day he was found dead in his bed, and at the post-mortem a large rupture of the liver with very extensive hæmorrhage into the peritoneal cavity was found. Such a case caused considerable public scandal, and the house surgeon of the time was censured by the coroner for having allowed the patient to go home.

[Mr. Howse finally showed several cases of fracture in which massage was employed until the blood-clot and swelling had diffused itself. This treatment, advocated by Mr. Bennett of St. George's Hospital, he had found very beneficial.]

The Treatment of Cheyne-Stokes Breathing.—Rabe ('Gazette hebdomadaire de Médecine et Chirurgie,' January 22nd, 1889) gives an elaborate description of Cheyne-Stokes breathing, and suggests the following treatment : Morphine, notwithstanding earlier observations to the contrary, has been found of distinct value by Huchard, Gubler, and others. It seems to allay anxiety, relieve the dyspnea, and to induce sleep. It should be administered at night, and in small doses, on account of the frequent association of chronic nephritis. According to Rabe, who cites many instances, a combination of morphine with digitalis is the most efficient remedy when the dyspnœa is a symptom of atheroma with weak heart.— *University Med. Mag.*, September, 1899.

THE CHANNELS OF TUBERCULAR INFECTION IN CHILDHOOD.

A Lecture delivered at the Hospital for Sick Children, Great Ormond Street, by

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GENTLEMEN,—Tuberculosis is such an important disease in childhood that I venture to bring before you this afternoon some results of my observations on tuberculous children in the post-mortem room of this hospital. And, by way of preface, I should like to say a few words as to the frequency of tuberculosis in early life.

Accurate statistics on this point are not easily obtained, for two reasons : first, a certain number of cases get well. In childhood I am afraid this number is very small ; the prognosis of tubercle in children, and especially in very young children, is bad, although it is certainly not hopeless. In 15 out of 769 necropsies which occurred while I was pathologist at this hospital, old, dry, caseous or calcareous foci of completely quiescent or healed tubercle were found in children who had died of non-tuberculous diseases, and I have found evidence of such recovery at such an early ·age as sixteen months. Moreover one's clinical experience makes it probable that a larger proportion than this recover.

Secondly, the clinical diagnosis of tubercle in children is so often a matter of uncertainty, and bacteriological tests are so seldom applicable to children owing to the absence usually of expectoration, that any statistics based merely on clinical observations are of little value.

The statistics, therefore, which I give you refer to the frequency with which tubercle is found post-mortem, not to the frequency of its occurrence clinically, although it follows from what I have already said that the difference is probably not very large.

In 769 post-mortem examinations, tubercle was found in 269, that is, in 35·2 per cent. Tuberculosis was the actual cause of death in 252 cases, that is in 32·8 per cent. So that one may say, roughly, that one third of the deaths in childhood

are due to tuberculosis. For some reason, then, children are very specially liable to tuberculosis; but I wish you to notice particularly that they are not equally susceptible at all ages, as you can see from the figures below. If the first twelve years of life be divided into three periods, each of four years, the distribution of the cases is as follows:

Age.	Number of the Cases of Tuberculosis.	Percentage of the Cases of Tuberculosis.
4 years ...	191	... 71 per cent.
4–8 „ ...	60	... 22·5 „
8–12 „ ...	18	... 6·5 .,

This table, however, does not show an important point, which is worthy of special emphasis, namely, that of the 191 cases that occurred in the first four years of life, no less than 117 occurred within the first two years; in other words, 43·4 per cent. of the cases of tuberculosis in childhood occur within the first two years of life.

I lay some stress on this age incidence because it is of great interest in its bearing on the source of infection. There has been a great deal of talk recently about the dangers of infection from tuberculous milk, and the special frequency of tuberculosis during infancy has been attributed to this cause.

It is a tempting theory: on the one hand we have the fact that 17·6 per cent. of samples of milk, taken direct from the milk cans as they arrived at the station, were found by Professor Delépine to be tuberculous, on the other we have the fact that tuberculosis is more common in infancy, the period of milk-feeding, than at any other time, and, moreover, that the intestines are very commonly, perhaps usually, found to be affected in the tuberculosis of childhood, especially of infancy.

But when one comes to examine the facts a little more closely, especially in the light of post-mortem investigation, the theory is seen to be untenable: the proportion of cases of infection from tuberculous food, i. e. of primary intestinal infection, is actually smaller in infancy than at any other period of childhood.

Tuberculous infection of the intestine is indeed very common in children; it was found in 52 per cent. of the cases mentioned above, but so also are tuberculous affections of the brain and meninges, and far more so pulmonary lesions; the

former were present in 48 per cent., the latter in 78 per cent. of the cases. There is, in fact, so great a tendency. to generalisation of the tuberculous process in children, and so many organs are usually affected, that it is a matter of extreme difficulty to determine which was the primary focus of infection in any given case, and too much weight must not be assigned to mere frequency of lesion of any particular organ, as evidence of primary infection.

Moreover, there is one point to which I wish especially to draw your attention, namely, that there is a very special reason for the frequent occurrence of intestinal lesions, not as a primary, but as a secondary lesion in the tuberculosis of childhood. This reason, to which I think hardly sufficient importance has been attached, is the fact that all infants and most children up to the age of at least four or five years, and sometimes later than this, unless specially taught, swallow all their expectoration. With primary affection of the lung, therefore, this continual swallowing of large numbers of tubercle bacilli might be expected to cause secondary intestinal lesions in a large proportion of cases, and one would expect that this proportion would be larger during the first two or three years of life when expectoration is always swallowed, than in later childhood. Statistics show that this is just what happens, taking 25 consecutive cases under three years of age, and 25 between the ages of three and twelve years, I found that 19 of the former showed intestinal ulceration—very slight in some cases, as might be expected, where the secondary affection occurred perhaps late in the disease—while only 10 of the latter showed any ulceration of the intestine.

I have not time to explain in detail here the lines upon which one hopes to work out the relative frequency of infection through the various channels, suffice it to say that in the lymphatic glands we have in children a very delicate index of the presence and duration of tubercle in the corresponding organs, and it is from a careful study of the condition of the mediastinal, mesenteric, and other glands, the degree of caseation, its recency or dried-up appearance or calcification, that we are most likely to get a true estimate of the duration of the tubercular process in the lungs, intestine, and other tissues to which those glands correspond, and so to find out which part was first

affected. There are obviously many difficulties in the practical working out of such observations; in many cases it is quite impossible to make out which was the primary lesion; in some there is sure to be error, but I think that on the whole this is the most reliable method open to us.

Applying this method to the 269 cases mentioned above, I found that in 46 cases the primary lesion could not be ascertained; of the remaining 223 cases, 138 appeared to have been affected through the lung, only 63 through the intestine.

So that, instead of the intestine being the usual channel of infection in childhood, it would appear that the primary infection is through the lung in by far the larger number of cases, and this difference, curiously enough, is more marked in infancy than in later childhood, in spite of the greater frequency of intestinal ulceration in infancy. Comparing again the first three years of life (strictly speaking, the term " infancy " should include only the first two years, but it is convenient to take the longer period, as we did so previously in comparing the frequency of intestinal lesions at the different ages) with the period from three to twelve years of age, in 89 cases under the age of three years, 63 appeared to have been primarily infected through the lung, 26 through the intestine, while of 91 cases between the ages of three and twelve years, 55 appeared to have been infected through the lung, 36 through the intestine.

These figures are, I think, of considerable practical importance, for they point to the conclusion that in early childhood, and especially in infancy, the risk of infection from tuberculous milk or other foods, is far less than the risk from impure air; and they teach us that for children who are predisposed by heredity to tuberculosis the most important of all prophylactic measures is to secure good ventilation and plenty of fresh pure air. But while primary infection through the lung is much the commonest mode of infection in the earliest years of life, it must not be forgotten that infection through the intestine is only second to it in frequency, and the danger of tuberculous milk is a very real one.

You will notice that of the 223 cases mentioned above, a small number are still left unaccounted for; while the channel of infection in 90 per cent. was either lung or intestine, the remaining 10 per cent. were through other channels.

The most important of these, because the most frequent, and perhaps the most amenable to early treatment, is the ear.

Now it must not be supposed that every child who has pus in the middle ear is tubercular. Speaking as a pathologist, I will say this, pus in the middle ear is extremely common, tubercular disease of the middle ear is relatively not very common; the former occurred in nearly 60 per cent., the latter only in about 10 per cent. of consecutive post-mortem examinations here.

When tubercular disease of the ear does occur there are usually enlarged tubercular glands about the upper part of the sterno-mastoid muscle, and as these caseate general dissemination of tubercle is apt to occur.

The ear appeared to be the primary channel of infection in 15 out of 269 cases of tuberculosis, i. e. in nearly 7 per cent., and it is a very interesting fact that 13 out of the 15 cases occurred within the first two years of life. There seems to be a much greater liability to primary infection of the ear with tubercle in the earliest months of life than at any other time, and a comparatively large proportion of the few cases of tuberculosis which occur within the first few months appear to be due to the ear. Only 11 out of the 269 cases died within the first six months, but of these 11 three appeared to have been affected primarily by tuberculous disease of the ear, and in one case the ear disease began at the early age of eight weeks.

Another channel of infection to which attention has recently been drawn is the tonsil. Dr. Hugh Walsham in 34 cases of tuberculosis, chiefly in adults, found tubercle in the tonsil in 20 cases, including one child. It has been suggested that the tubercle entering the tonsil infects the cervical glands, and, spreading downwards along the chain of cervical glands, reaches the mediastinal glands, and thence spreads to the lungs. It must be remembered, however, that the frequency of tubercle in the tonsil is open to exactly the same interpretation as the frequency of tubercle in the intestine. Every time tuberculous sputum is coughed up there is a risk of infecting the tonsil, and it is only natural that the tonsil should frequently become infected where there is already disease in the lung. Moreover, there is good reason for believing, from post-mortem observations, that such direct extension from the cervical glands to the mediastinum,

if it ever occurs, must be extremely rare. I have not time to detail all the facts here, but I may point out that instead of finding, as one should do in that case, a continuous chain of caseous glands down the neck and into the mediastinum, one usually finds that the glands at the upper part of the neck are extensively caseous, and those below are progressively less affected, until, perhaps, just above the clavicle there is no affection at all, or only very slight; then, on passing below the level of the first rib, one finds large completely caseous glands in the mediastinum. The theory of direct extension from the neck entirely fails to explain this sudden great difference in the degree of affection of the glands just above the level of the clavicle, and those in the mediastinum. It is surely much simpler and more natural to suppose that the mediastinal glands have been infected quite independently in the usual way through the lung.

And I must mention another great difficulty in accepting such a view. If you examine carefully the mediastinal glands you will find that those on the right side are much more frequently and extensively affected than those on the left. This difference, which is very marked, should correspond with a similar difference in the affection of the cervical glands on the two sides; but there is no such difference, the two sides of the neck are affected about equally.

If you will examine cases carefully, both clinically and post-mortem, you will, I think, agree with me that tuberculosis of the tonsils and fauces is not very rare; but that, in children at any rate, it is almost always secondary, not primary. In the 269 cases which I have mentioned, only two seemed to have been possibly primarily affected through the tonsils or fauces, and even these were doubtful.

Another channel of infection, to which but little attention has been paid, is the teeth. Now, I have no positive evidence to bring forward on this point, but I should like to say this: the more one sees of children, the more one is impressed with the troubles that arise from neglect of the teeth in children.

How often one has seen large glands below the ramus of the jaw in children with bad teeth. Sometimes certainly these glands have been tubercular, and one wonders whether the infection may

not have entered through the carious teeth. This much is certain, that tubercle bacilli have been demonstrated in carious teeth, and whether they came there from food, or whether, like the tubercle in the tonsils, they were the result of expectoration from the lung, one cannot say; but it is, I think, worth bearing in mind that probably carious teeth, especially in a child predisposed to tubercle, may be a primary channel of infection, and certainly they produce enlargement of glands which may predispose to tuberculous infection of these glands.

In speaking of the frequency of tuberculous lesions of the intestine, I said nothing of the stomach, because, although, as I pointed out, the intestine is undoubtedly the most common channel of infection next to the lung, the stomach is probably never a primary channel of infection. I mention it, however, because very rarely, but more commonly in infancy and early childhood than at any other time of life, tubercular ulceration of the stomach is found. It occurred five times in 269 cases of tuberculosis, but it was always associated with so much more advanced tubercular lesion elsewhere that it seemed certain that it was not the primary lesion in any of the cases.

It has been suggested that in some cases the uterus may be the primary channel of infection. Tuberculosis of the uterus or Fallopian tubes is not very rare in children; I found it in 12 out of 126 tuberculous female children, but in 9 out of the 12 cases it was associated with tubercular peritonitis, and it seemed probable that the tubercular process had spread downwards from above rather than vice versâ, for in some cases the Fallopian tubes were alone affected, or affected much more than the uterus, and in all cases the cervix and vagina appeared to be normal so far as one could judge with the naked eye. Moreover, in all the cases there were extensive tuberculous lesions elsewhere. In one case it seemed possible that the uterus had been the primary channel of infection, but I think that in all the others these parts were infected secondarily, and one can see that infection would very readily spread from the peritoneum along the Fallopian tubes.

Time forbids me to say more, but I will just remind you that there are other channels of infection. I have said nothing of the skin. Bone and joint lesions also, clinically at any rate, are not uncommonly the first evidence of tubercle in chil-

dren, and it is very difficult to be sure how the infection enters in these cases. By the time they come under the observation of the pathologist there is, so far as my experience goes, invariably some visceral or glandular tuberculous lesion present; and it may be, that, like tuberculous meningitis, even when the bone or joint lesion appears to be primary, it is really always secondary to some small focus of tubercle elsewhere.

ŒDEMA OF THE PARALYSED LIMBS IN HEMIPLEGIA.

By CHARLES LEWIS ALLEN, M.D.

IN hemiplegia from gross brain lesion it is not uncommon to find some swelling, with glossiness and slight pigmentary changes in the skin of the paralysed limbs; less frequently muscular atrophy and changes in the joints occur.

The condition of œdema in hemiplegia is a rare one. Gowers states that in hemiplegia slight œdema is often present in the paralysed limbs, and that it may be of greater extent, but mentions no example of its occurrence in any such degree as in a case of mine. On searching the recent literature I have only been able to find reports of three such cases: one by Hare, of Philadelphia; one by Preobrajensky, of Moscow; and one by Gilbert and Garnier, of Paris. In the first of these the right arm alone was affected. In the second there was extensive œdema, and eventually gangrene of the paralysed extremities, but the case was complicated by aneurism of the aorta and thrombosis in the vessels of the hand and foot. The last case was exhibited before the Société de Biologie, of Paris, as one of hemiplegia with greatly swollen hand, presenting a condition not to be distinguished from the so-called " succulent hand," declared by Marinesco to be pathognomonic of syringomyelia. The patient was still alive when the observation was published. In the first two cases the autopsy showed, in common with the one reported by me, that large areas of the brain were affected. There is no satisfactory explanation of the production of the localised œdema, however.

Von Monakow makes bare mention of œdema in hemiplegia, though he says that in the early stage there is a tendency to slight swelling and increased warmth of the paralysed limbs, while in the chronic stage coldness and lividity, with glossiness of the skin, are the rule. In speaking of other trophic disturbances in hemiplegia (particularly of muscular atrophy), however, he calls attention to the fact that in every case the brain lesion has been quite extensive, and this seems to have been the rule also in the cases of œdema in hemiplegia which have been reported.

The circulation of both blood and lymph is favoured by the action of the muscles; hence loss of power in the muscles on the one hand, and failure of vaso-motor control on the other, would seem to be responsible for the production of stasis and œdema on the paralysed side. As to why this so rarely occurs, however, we have no definite information.—*Journal of Nervous and Mental Disease*, August, 1899.

A Disease resembling the Plague.—Dr. Favre describes in the ' Zeitschrift für Hygiene und Infections Krankheiten,' vol. xxx, part 3, a disease which closely resembles the plague. It is found in Akscha, a province of Russia, near the Chinese frontier. The clinical appearances of the disease are identical with those of the plague, but it is never epidemic, and the cases always appear in small groups as house epidemics. The disease is known as " sarbaganpest," and has not yet been scientifically studied.—*Medicine*, September, 1899.

A new Combined Galvanic and Faradic Battery, designed by Dr. Herschell.—This instrument is an attempt to improve upon the German type of battery now in general use, and whilst increasing its efficacy as an instrument of precision in the hands of the expert, yet to simplify it to such an extent as to enable it to be used with success by one having no previous knowledge of electricity. The special points in its construction to which attention is drawn are the following:—1. All switches and other movable keys, the use of which has to be learnt by the operator, have been dispensed with. There is instead simply a metal plate (F), provided with numbered holes, into which pegs have to be inserted. A printed key (E), fixed adjacent to it, gives full directions for starting or stopping the currents or producing any combination desired. 2. A new current reverser (H) has been designed, by which the + and — signs at the terminals automatically change when the direction of the current is altered. 3. The

faradic coil (C) is a sledge constructed in the best manner, and provided with a rheotome which cannot fail at a critical moment and does not require the accurate adjustment of several springs to make it work. There is also a rack and pinion (D) by which the current strength can be increased without jerks or shocks in a very gradual manner.

equally. In this battery the cells are connected up in series and the current graduated by a Willm's current controller (G).   6. In the ordinary type of battery the cells cannot be got at for recharging without disconnecting many wires. The replacing these usually requires a skilled workman and occupies a long time. In this improved battery, by the

Exhibited in the Section of Pharmacology at the Meeting of the British Medical Association at Portsmouth.

This coil is actuated by a chloride of silver cell of the latest construction, which has a continuous life of one hundred hours. 4. The galvanometer (A) is of the most modern type, and does not depend for its usefulness upon the sharpness of a needle point or the integrity of a silk fibre. It is always ready and in working order. 5. With the ordinary dial collector, however carefully employed, it is impossible to use up the cells

simple removal of three nuts (T T T) with a special spanner, the lower part (L) of the instrument in which are the cells comes right off, and they can be inspected at will. The replacement of the aforesaid three nuts absolutely restores all the connections and puts the battery again in working order. The instrument is to be obtained from Messrs. Isenthal, Potzler & Co., 85, Mortimer Street, W.

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* *Specially reported for The Clinical Journal. Revised
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NOTICE.

WITH DR. LUFF IN THE OUT-PATIENT DEPARTMENT OF ST. MARY'S HOSPITAL.

Locomotor Ataxy.

GENTLEMEN,—This man is the subject of loco-
motor ataxy. As he seated himself you had a
very good illustration of the way in which the
lightning pains seize him. You noticed the sud-
denness with which the pain came on, very similar
to the sudden way in which the pain of lumbago
frequently comes on, especially in connection with
a first attack. While the pain lasted he was in
decided agony, but fortunately it did not last long.
That is the way in which the lightning pains of
locomotor ataxy generally commence. This
patient presents a rather bad example of locomotor
ataxy; the disease in him is in the late second
stage. We judge of the stage of the disease by
the amount of ataxy that is present. In the first
stage these patients can walk without any assist-
ance, there being only slight ataxy discernible.
In the second stage they require some assistance,
either the help of one or two sticks, or someone
to assist them when walking. In the third stage
the ataxy is so marked that they cannot walk at
all. This patient is in the latter part of the
second stage. He has suffered a good deal from
lightning pains, but he has had no trophic dis-
turbances, for he has never had perforating ulcer
of the foot, nor the affections of the joints
known as " Charcot's joints." He exhibits, how-
ever, other well-marked symptoms. The knee-jerks
have been lost for a long time, and he suffers from
marked ataxy, lightning pains, and the Argyll-
Robertson phenomenon of the pupils, but he has
not the minute contraction of the pupils which
frequently occurs in this disease. The pupils in
this case are moderately dilated. As regards the
cause—locomotor ataxy, in about 80 per cent.
of the cases, is due to syphilis. In this case there
is a very marked syphilitic history, so that there is
little doubt but that it is a sequela of that disease.

When you are examining and questioning a patient with locomotor ataxy in order to ascertain the symptoms and signs of the disease that he presents, you should think of the possible symptoms in three groups, namely, motor symptoms, sensory symptoms, and reflex symptoms. Of the motor symptoms this patient displays the ataxy, which is very marked, and the Argyll-Robertson phenomenon, which may be included in that group, as well as in the reflex group. Of the sensory symptoms this patient shows marked anæsthesia, as is indicated by examination with a finger and a pin, and also when he is walking on hard grounds he tells us that it seems to him as if he were treading on grass or something soft. So that there is anæsthesia of the sensory nerves in the lower extremities, especially in the feet. And, further, among the sensory symptoms, there are the lightning pains in the abdomen, from which you have seen him suffer. I am not aware that he has any other sensory symptoms; for instance, he seems to have no other crises. The commonest of the other crises would be the vesical, that is to say, pains in connection with the bladder, with a desire to frequently pass water and to strain in connection with the act. Next in order of frequency are perhaps the rectal crises, in connection with which there is a desire to defæcate, associated with a good deal of straining, but there may be no motion passed at all. These are very troublesome crises; there is a good deal of straining and tenesmus, yet nothing may happen to warrant it at all. Next are the laryngeal crises, manifested by a sudden spasm of the vocal cords, causing dyspnœa, and the bronchial crises, in connection with which there is spasmodic cough. Then there are the intestinal crises. Those are different to the " girdle pains " which he complains of, which are due to an affection of the sensory nerves. Intestinal crises are practically the same as very sudden attacks of colic, but passing off after a short time.

Then to come to the third group—the reflex symptoms. This patient has had absence of knee-jerks for some time, and he exhibits the Argyll-Robertson phenomenon, which may be classed as a reflex symptom as well as a motor one.

As regards *treatment*, this patient has practically not been benefited at all by the antisyphilitic

treatment upon which he has been put. I have been giving him iodide of potassium in large doses with some sal volatile. As a matter of fact, in locomotor ataxy we are almost powerless as regards treatment. To cure the disease is impossible. We can, especially if we get the patient in an early stage, arrest it, and even ameliorate the symptoms, but you must hold out no hope of curing the disease. Still its progress can be arrested if the patient seeks advice at an early stage of the disease, and especially if it is known to be of syphilitic origin. This man sought advice at too late a stage for medical treatment to benefit him.

As regards the pathology of the disease, it is a neural degeneration, both peripheral and central, and as a result of this neural degeneration a sclerosis of the posterior columns of the cord occurs. But this sclerosis is quite secondary to the neural degeneration, which is peripheral and central.

I propose to admit this patient into the hospital, so that he may be relieved as much as possible of his severe attacks of pain. If he were remaining as an out-patient I should be inclined to give him now small doses of morphia and Indian hemp, simply as anodynes. Indian hemp is very helpful in such cases. With regard to the question asked me as to whether suspension is beneficial, although I have seen a good many cases treated by suspension I have never seen any good lasting results from it. Still I should not like to speak too emphatically against it. I think it is given up as a form of treatment in this country, though I believe it is still practised abroad. At one time it was frequently employed in this hospital, and some of the cases I followed up for years, but I never saw any improvement which could be attributed to the suspension.

Mitral Stenosis and Failure of Compensation.

Here is a man who comes complaining of swelling in the legs and shortness of breath. It is a case of mitral stenosis. You see that he is in a very different condition from when he came last; he is much worse, and obviously compensation is failing. The increased swelling of the legs shows an increase of back-working from the heart, and his shortness of breath is in part due to mechanical congestion of the lungs produced by the back-working, and in part to the deficient pumping

power of the heart. His pulse is regular, of extremely low tension, and 112 to the minute. I propose to admit him into the hospital. The previous note was that the apex-beat was in the fifth interspace, one and a half inches outside the vertical nipple line, and that there was a presystolic murmur. Now, on examining him we find there is a very localised murmur, and I also hear a faint diastolic murmur. He has some aortic regurgitation. He has marked congestion of both bases of the lungs, and you can hear the moist sounds and small râles which occur in connection with mechanical congestion of the lungs. He has a tendency to syncopal attacks, vertigo, and to dropsy. Slight albuminuria is present, indicating the back-working effect upon the kidneys. The liver is enlarged and reaches three quarters of an inch to one inch lower than it should do, owing to mechanical congestion from back-working.

Chronic Plumbism.

This patient is suffering from lead neuritis. His occupation is that of a house-painter, and the plumbism shows itself mainly in neuritis of the right upper extremity extending down to the finger tips, and producing there " pins and needles," numbness, and a certain amount of loss of muscular power. He complains of diarrhœa. I have been giving him sulphate of magnesium and sulphate of sodium, and the diarrhœa is the purgative effect of the medicine, which is evidently too strong. I wanted to secure elimination of the lead by the bowels, and it is therefore necessary to give saline purges until the bowels are opened two or three times a day. As he has had considerable purging, I shall direct him to leave off the medicine for two or three days.

Menière's Disease.

The next patient is a man aged sixty-eight, a pedlar, who complains of giddiness and pains in the head, with cough and hæmoptysis. He says he has never had these symptoms before. The attacks of giddiness last a few minutes, and he gets two or three such attacks in a day. He also gets singing noises in the head. Of the different forms of vertigo—cerebral, cardiac, and gastric—this is certainly a case of cerebral vertigo. There is nothing to indicate that it is associated with anything wrong with the heart. As it is a case

of cerebral vertigo, is it connected with the cortex or with the large ganglia, or is it an affection of one of the special senses? We have a very definite history that when the attacks come on they are accompanied by sounds in the ears, so that it is most probably an affection of the auditory nerve or nerves. If so it is probably a neuritis, a peripheral affection of the auditory nerves either in the semicircular canals or in the ampullæ. It is not at all uncommon for these attacks of Menière's disease to follow either exposure to cold or an attack of rheumatism. It may be a rheumatic neuritis, if it follows exposure to cold it is likely to be rheumatic. These cases yield, as a rule, very readily to a mixture of sodium salicylate and iodide of potassium. They require only small doses. The mixture should be taken three times a day, half an hour after meals.

Double Aortic Disease.

This patient is a man aged sixty, a labourer, who complains of pain in the chest and epigastrium, with throbbing on the left side of the head. He states that he feels a throbbing in the left ear. He has a slight cough and spits some blood. His appetite is bad. He states that he has had these symptoms for a fortnight. He can feel his heart beating, especially if he goes upstairs. At times he feels giddy and faint, but he has never fainted. He had rheumatic fever twenty-five years ago. On examination of the heart I find that he has double aortic disease. It is an interesting case for you to examine. There is a well-marked systolic murmur, and there is also a diastolic murmur. You remember he came to us with the signs of failing compensation, especially with a tendency to get easily out of breath, and I thought it would probably turn out to be a cardiac case. It is a case of double aortic disease, with, no doubt, some mitral regurgitation, although it is difficult to tell whether that murmur which can be heard in the axilla is the conducted aortic sound or whether it is a mitral systolic murmur. I have little doubt that there is mitral regurgitation. The pulse is of a collapsing nature—the water-hammer pulse. On dilating some of the veins of the forehead by scratching, capillary pulsation is obtained. As to the extent of the failure of compensation, you can ascertain on percussion that there is some obvious enlargement of the heart; there are a few moist

sounds to be heard at the bases of his lungs. The liver is slightly enlarged. The next thing is to examine his urine and see if there is any albumin in it, and to examine his feet and see if there is any swelling. There is no swelling of the feet, so he has come to us with only partial failure of compensation. This is a case which we must not treat with digitalis; that drug is contra-indicated because, although it increases the force of the systole, it increases the length of the diastole, that is to say it increases the period of time during which regurgitation takes place. We must therefore give him cardiac tonics and stimulants other than digitalis, or convallaria, or strophanthus. The most useful drugs for this patient are caffeine citrate and strychnine.

Atonic Dyspepsia.

This patient is a man aged sixty-three, who complains of pain in the stomach, which pain is worse after food, first becoming intense half an hour after meals. There is some pain there constantly. Sometimes he has a good deal of flatulence with it. His tongue is large, and pale at the tip and edges. There is no doubt that he is suffering from the atonic form of dyspepsia,' accompanied by more or less flatulence.

Cardiac Dilatation.

This next patient is a man aged seventy-one, a carpenter, who complains of headache, weakness, and giddiness, which he has had for the last month. He was an in-patient at Guy's Hospital last Christmas. He has polyuria, and his head aches on the top. Six weeks ago he was told he had enlargement of the heart. Sometimes he micturates three or four times during the night. We find on examination that there is no sugar in his urine, and that its specific gravity is 1020. The apex beat is in the seventh space, one and a half inches outside the vertical nipple line. The cardiac dulness is a finger's breadth outside that. This shows that we have to deal with a dilated heart rather than with one that is hypertrophied. In the case of hypertrophy the apex beat is localised to one interspace, in dilatation it is spread over two or three. This is simply a cardiac case; there is considerable dilatation of the heart with mitral regurgitation, and the only murmur to be heard is a mitral systole. There is extreme

atheroma of the arteries, and a little arcus senilis, but not so much as I should have expected. The reason for the frequent micturition is probably owing to enlarged prostate, or irritability of the bladder rather than that polyuria really exists.

Chlorosis.

This patient is a girl, aged seventeen, who complains of pain in the left side of the chest. She gets out of breath very easily, and becomes faint, but she does not lose consciousness during the attacks. It is a case of chlorosis. She has a fairly typical chlorotic colour, pale lips, pale buccal membrane, and yet she is fairly fat in the face. Chlorosis is that form of anæmia which is limited to young females, and generally occurs between the ages of fifteen and twenty-five. The affection is generally accompanied by a good deposition of fat. The apex-beat is outside the nipple line, and the cardiac dulness extends to one finger's breadth outside the nipple line. There is a very faint hæmic murmur at the pulmonary cartilage, which disappears immediately the region is pressed on with the stethoscope. You can tell the hæmic murmur by its disappearing or being very much altered by pressure with the stethoscope. It is probably due to a flabby condition of the pulmonary artery, which is restored to more or less of its natural size by pressure with the stethoscope.

Gastric Anæmia.

This patient is a girl nineteen years of age. She says she feels sick and has vomited blood. The affection began seven months ago. She has pain after taking her food, and she then feels sick and giddy. She vomited blood about seven months ago. She says the pain comes on a quarter of an hour after taking her food. Apparently this is a case of old gastric ulceration. The points which we have to determine in this patient are, are these pains which she gets fifteen minutes after taking food due to old adhesions from the gastric ulceration, or are they due to a recurrence of gastric ulceration, or are they due to gastric anæmia and dyspepsia? I think that possibly she had some adhesions produced in connection with the former attack, which was apparently a fairly severe attack of gastric ulceration, and it is quite possible that such a severe attack of gastric ulceration would

result in the formation of some adhesions. If the ulceration occurred on the anterior wall of the stomach and near the lesser curvature, then the adhesions would probably be contracted with the left lobe of the liver. If on the posterior wall of the stomach, also near the lesser curvature, which is the next commonest seat for these ulcerations, the adhesions would probably be contracted with the pancreas or with the connective tissue around the pancreas. We will examine her to ascertain by manipulation whether the stomach is adhering to any other part. As I palpate the stomach, if there are adhesions the process is likely to produce pain. However, I find there is no pain on manipulation, not even when I put my hand over the region of the pylorus and then suddenly depress the stomach. Therefore my examination makes me consider that no adhesions have been formed. It is a case of gastric anæmia or of some form of dyspepsia, which, if it is not treated, may go on to gastric ulceration. The best treatment, in my opinion, for these cases is to give carbolic acid in large doses—six grains in an ounce of water, three times a day—to be taken with an equal quantity of water immediately before food.

The Voice and the Circulation.—Skene contributes a very suggestive article on " The Voice in Diagnosis " to the ' New York Medical Journal ' of June 10th. Among many other points he refers to the voice of mitral insufficiency as being husky, irregularly tremulous, and not well sustained. This husky quality in heart disease is due to hyperæmia of the vocal cords, and is the same in character as the œdematous voice of nephritis, and very like the rough, harsh voice of the habitual drinker. In aortic insufficiency, on the other hand, there is anæmia of the larynx, and the voice becomes high-pitched and soft in quality, as well as ill-sustained. The dehydrated blood of Asiatic cholera and cholera morbus represents itself by a high-pitched, thin voice, reduced finally perhaps to a whisper. " The weak, soft voice in acute anæmia from hæmorrhage is distinguished from that of dehydration by its being low-pitched, owing to relaxation of the vocal cords." Coming on suddenly or quickly, it is a most valuable sign of concealed hæmorrhage, though similar voice signs are noted from fainting or sudden shock.—*Denver Medical Times.*

A SERIES OF CASES OF MAMMARY DISEASE, WITH REMARKS.

BY

A. MARMADUKE SHEILD, M.B., F.R.C.S.

On Implication of the Axillary Glands in Cancer of the Breast.

WITHOUT quoting " percentages," it may be safely said that by the time a mammary carcinoma is appreciable to the touch, the axillary lymphatic area is infected, though perhaps to a small and not easily recognised degree. We must remember that if a gland contains infective cells, only to be recognised by the microscope, it is as surely diseased as though it proved a tumour the size of a pigeon's egg. Holding this in mind, it is easy to understand that the possibility of feeling or detecting enlarged glands in the axilla, has little significance or value in cases of carcinoma. If they can be detected, indeed, prior to operation, the surgeon may assure himself that for one infected gland he can feel, there are many others he cannot thus appreciate, and the contamination is far more extensive than he imagines. My own practice is to freely open the axilla in every case and thrust the fingers well under the pectoral. If 'the least sign of glandular implication be detected I at once remove the whole sternal part of the pectoralis major, cutting the muscle close to the ribs and humerus respectively. The pectoralis minor may be then divided if needful. Invariably in such cases, I have found a chain of " shotty " glands extending upwards, as high as the clavicle, the uppermost gland being near the subclavian vein. The extent of disease is far more than suspected, and only to be appreciated or detected by removal of the muscle. I feel sure that in cases of glandular disease, operated upon after former methods, diseased glands situated high up near the subclavian region remained undetected. The following example will show how dubious and uncertain are the signs of glandular infection.

In July, through the kindness of Dr. Selwyn Harvey, I saw a lady aged forty-eight, married, and the mother of a numerous family. She looked so

well that it was difficult to believe she was the subject of a serious malady. The left breast, which was voluminous, was, however, affected with well-marked infiltrating carcinoma. The case might easily have been confounded with simple chronic mastitis, but at one spot the skin was distinctly " dimpled " and puckered, and the diffuse hardening was here more localised or concentrated. The most careful examination failed to detect any axillary gland implication. At the operation, the axillary cavity was opened, and beneath the pectoral a gland the size of a small plum was at once felt. I therefore removed the pectoralis major, and now a chain of glands was at once detected, which reached as high as the clavicle. The highest gland lay in contact with the subclavian vein. The pectoralis minor was divided, and all the glands and connective tissue removed from the axilla, leaving the vessels, nerves, and posterior muscles exposed. An enormous wound was the result, and the patient suffered a great deal during the earlier days of speedy healing. This case is only one of several, which have convinced me that to detect diseased glands in the axilla an opening is essential, and I believe that removal of the whole lymphatic axillary area is an essential step in the operation for all cases of known mammary cancer.

Tumour of Subclavian Triangle secondary to Removal of the Mamma. Difficulty of Diagnosis.

A single woman, aged forty-two, came to the Hospital for Women and Children in Waterloo Road in February, 1899. The right mamma had been removed for carcinoma by a hospital surgeon three years and six months before. An extensive operation was performed. Two years afterwards a small nodule developed in the skin of the thorax; this was again removed. Her attention was drawn to the present trouble by a sensation of numbness and tingling down the right arm and into the hand. The limb was not œdematous, but the fingers were cold, and the radial pulse was markedly diminished in volume as compared with the opposite side. In the subclavian triangle was a hard, deeply-seated, fixed tumour, the size of a small walnut. In texture, feeling, and situation it exactly resembled an exostosis. It was of bony hardness and absolutely fixed. The diagnosis was difficult and of importance. If this were a true bony tumour, an

attempt should have been made to remove it. If the growth consisted of hard cancerous glands, any operation could be of little utility. Compression of the vessels to such an extent by cancerous glands was certainly exceptional, and in favour of bony growth. Many diverse opinions had been expressed about this case. The Röntgen rays were applied, and it was at once evident that the tumour was not osseous. It was only represented by a fine " shade " in the skiagram, hardly to be discerned, and obviously not of that density and opacity which would denote bone. I have since lost sight of the case, but it seemed to me that it might have been possible to relieve the vessels from the growth by splitting the latter. Any attempt at complete eradication seemed hardly wise or feasible.

Chronic Abscess of the Mamma.

For the notes of the following case of mammary abscess I am indebted to Dr. Méchod, the resident medical officer at the Waterloo Bridge Road Hospital.

A married woman, aged thirty-five, was admitted in July, 1899, for a tumour of the left mamma. She had noticed it for three months; it gradually increased, and had been painful at times. A tumour the size of an orange, obviously elastic, was developed in the lower part of the mamma, below the nipple, which was not retracted. The skin over it was not puckered, and was slightly red. The swelling appeared as though fixed to the ribs beneath. This woman had five children, and suckled all but the last. She had never had a sore nipple or eczema. No evidence of a blow or other injury could be elicited. The situation of this swelling, and the manner in which it seemed as though fixed to the ribs beneath, were very suggestive of cystic carcinoma. The elastic feeling was also just what one might have suspected in a soft malignant growth.

On July 17th, with full permission to do what seemed needful, the swelling was incised, and proved to be a chronic abscess. Thinking that necrosis of a rib might be present, the swelling was laid quite freely open, and some thick pyogenic membrane curetted away. The ribs were exposed, but not denuded of periosteum. The abscess was probably of tuberculous origin.

There can be no question that the majority of

mammary abscesses are associated with lactation, and the absorption of septic organisms from cracks and fissures of the nipple. The diagnosis of these abscesses and their leading symptoms are familiar to any practitioner. It is otherwise with chronic abscess where the absence of cause, and the non-association with suckling or lactation often puts us off our guard and leads to serious errors both in diagnosis and treatment. The latency of pyogenic organisms in the tissues is a subject of which we know certainly very little.

It is a well-established clinical fact that abscess may arise in the site of an old inflammatory focus many years after the original inflammation. The activity of the process appears to be excited by a blow, exposure to cold, attacks of illness, as influenza, and other similar agencies. It will be found that a significant proportion of chronic mammary abscesses develop in breasts which have been the site of an ancient suppuration. This is not always the case, and the origin of many of these abscesses is shrouded in complete mystery. The practical point to recollect is the extreme resemblance of a deeply-seated abscess surrounded by thick walls to carcinoma, and the ease with which a mammary gland may be needlessly removed unless exploration is systematically carried out.

Enormous Sub-pectoral Abscess in a Male.

The following strange case came before my notice in December, 1898, by the kind recommendation of Dr. Cooper of Hampton.

A very stout man, between fifty and sixty years of age, showed a large rounded swelling on the left side of the chest. He was " puffy," with a stout thick neck and a red and congested face, as though he had some respiratory difficulty. For some two years he had been " ailing " with obscure thoracic pains and " shortness of breath." Abscesses formed and burst about the upper part of the sternum on the left side, and two unhealthy, livid sinuses still existed in this position. Much pain and uneasiness had been complained of about the left pectoral region, but the actual history of formation of the swelling which now existed was quite vague. There was no evidence of syphilis.

The case appeared at first sight to be a huge tumour of the left breast, but on closer examination is was obvious that the mamma was really

heaved forward, the swelling, whatever its nature, being entirely retro-mammary. It had been aspirated by Dr. Cooper and nothing but blood and serum was evacuated. The tumour felt elastic, and might easily have been a soft growth, or a deeply-seated chronic abscess with thick walls. There was no sign of aneurism, such as pulsation or bruit, and the vocal cords moved naturally, as seen with the laryngoscope.

The patient was admitted into St. George's Hospital, and I was preparing to explore this swelling by incision, when the abscess, for such it was, suddenly evacuated itself in the night through one of the sinuses near the sternum, the pus deluged the clothing and bed of the patient. He was obviously very ill, and seemed in a pyæmic state, and I determined to make a more free opening for escape of pus. He was given the A.C.E. mixture with great precautions, and the anæsthetic was not closely pushed, because of the dyspnœa and general congestion of throat and fauces. I laid open all the sinuses near the upper part of the sternum, cut away their edges, and scraped out unhealthy granulations. An opening large enough to admit the index finger was found close to the edge of the sternum, in the left first interspace. This led into the mediastinum. The back of the sternum was superficially carious, and it was obvious that the case was one of mediastinal abscess which had emerged from the chest beneath the pectoral muscle, and also through the first interspace, where spontaneous evacuation had occurred. The parts were tamponaded with iodoform gauze, and slowly but surely healed. The pus was very serous and watery and contained the pneumococcus in abundance.

As might be expected, the sub-pectoral abscess again slowly filled, and it was opened and drained by Dr. Cooper. He informs me that the sinus still sometimes discharges, but that the man is able to follow his employment, being almost entirely relieved of his old respiratory distress. Later reports state that he is almost quite well. Sub-pectoral swellings are often difficult of diagnosis. Abscess in this situation is almost invariably due to necrosis of the ribs or sternum, seldom, if ever, does it really originate in the mamma—such abscesses, if opened, discharge indefinitely unless the necrosed bone can be removed. Other causes of suppuration in this

locality are blows, and the discharge of an empyema or abscess of the lung.

A few cases of soft sarcomatous growths are recorded as originating beneath the mamma, and obviously the similarity to abscess of these serious affections would be very close. So gummatous formations may occur in this locality, but in the cases I have seen the tumour was obviously in the pectoral muscle, and rapidly disappeared under iodides. Lastly, it must ever be kept in mind that some thoracic aneurisms run a curious and deceptive course, and, becoming diffused, may form swellings which do not pulsate and which the best surgeons have mistaken for abscesses. The moral of the use of the aspirator in cases of doubt is here very important. In the case just related I am not satisfied as to the true cause of the malady. The pneumococcus being found in such quantities in the pus is interesting, and the caries detected on the sternum might readily have been due to the eroding action of pent-up pus, and not the cause of the suppuration.

The Difficulty of Diagnosis of Sub-mammary Carcinoma.

When cancer, as is sometimes the case, attacks a deep pectoral lobule of breast-tissue, its recognition may be very difficult, for the whole mammary tissue, the skin, fat and fasciæ, intervene between the examining hand and the growth, so that the usual diagnostic features of the latter are cloaked or concealed. These cases are peculiarly perplexing in the case of very fat patients.

A single lady, aged forty, was brought to me in June, 1899, for an opinion about the state of the left mamma. For nine months she had noticed " something wrong " with the breast. It was occasionally painful, and on examination a hardness was found for which advice had been sought. She had seen an eminent consultant, who gave no positive opinion. On examination the upper part of a very voluminous mamma gave all the evidences of chronic mastitis. On taking up the gland between the finger and thumb irregular indurated areas of tissue could be felt. On careful examination with the flat of the hand, no distinct tumour could be made out, though on account of the amount of adipose tissue this was difficult to certainly ascertain. The nipple had always been small and a little retracted, the axilla seemed quite

free, and the skin was smooth. The patient was the picture of health, but was very anxious, as she had lost two aunts from carcinoma of the mamma. I had little doubt that this case was one of chronic mastitis, and I strongly urged the removal of the breast, for I felt sure that it was in a morbid state and that cancer was peculiarly liable to develop.

The operation was done a few weeks after, the whole gland with the surrounding fat and the pectoral fascia being freely removed, leaving a very large and deep wound. This speedily healed, with little pain or constitutional disturbance. Examination of the mamma after removal showed that it was tough and fibrous. At one spot, near its deeper aspect, the tissues were drawn towards a " knot " of suspicious hardness, and the microscope, to my disappointment, indubitably evidenced that cancerous change had here already commenced. The axilla, unfortunately, had not been cleared as it should have been. I felt very confident in this case that I had " forestalled " cancer. Nothing could show us more forcibly how very early operation is indicated in cases which admit of doubt. In all the cases of sub-mammary cancer I have hitherto examined I have always been able to feel a hard lump deep in the breast. This lump, small and obscure, has always given rise to much professional difference of opinion. In the present case, however, no such formation could be detected on very careful examination. The fact, therefore, is clear, that in these patients with voluminous mammæ the only evidence of a nodule of cancer on the deep surface of the breast may be some hardening and infiltration of the breast substance over it, very like and perhaps indistinguishable from chronic mastitis.

A case equally striking is as follows. For the notes of it I am indebted to Dr. Méchod, the Resident Officer at the Women and Children's Hospital in the Waterloo Bridge Road.

A stout married woman had noticed a " lump " in the left mamma for six months. It gradually increased, with very little pain. The patient was childless. The tumour, hard and indurated with ill-defined margins, lay at a depth above the left nipple, which was a little retracted. Careful examination revealed no elasticity, indeed, it seemed remarkably solid. No " glands " were to be felt. The breast was enormously large and fat.

In this case I must say that the similarity to

carcinoma was complete, and only the rule I universally adopt of exploring mammary tumours made me avoid a serious error. I cut through much yellow fat and mammary tissue, and finally into the swelling. To my great surprise out gushed a jet of clear fluid. The tumour was a cyst with thick walls and a cavity about the size of a walnut. It lay at a great depth. I swabbed it out with pure carbolic acid and stuffed it with iodoform gauze, ordering this to be withdrawn on the third day, when a tube was to be inserted, and the sinus carefully kept aseptic. The mamma was saved, and the wound soundly healed.

Cyst of the Mamma simulating Cancer.

In July, 1899, I operated upon a nun, aged about forty, who had a tumour of the right chronic mastitis was not to be lost sight of. On July 11th I made an exploratory incision, and the knife entered dense, hard, fibrous material, which might readily have been mistaken for carcinoma. Warned by previous cases, I continued to deepen the incision, and a jet of clear fluid escaped with vehemence, as a cyst of considerable size was opened. The cavity of the cyst was irregular, about as large as a walnut, and it was surrounded by dense tissue at least half an inch in thickness. There was no trace of growth in its walls. I resolved to dissect away the cyst and save the mamma, but in doing so I opened numerous tiny secondary cysts, and it was obvious that the whole breast was diseased. I accordingly removed it. Subsequent examination showed no carcinomatous change.
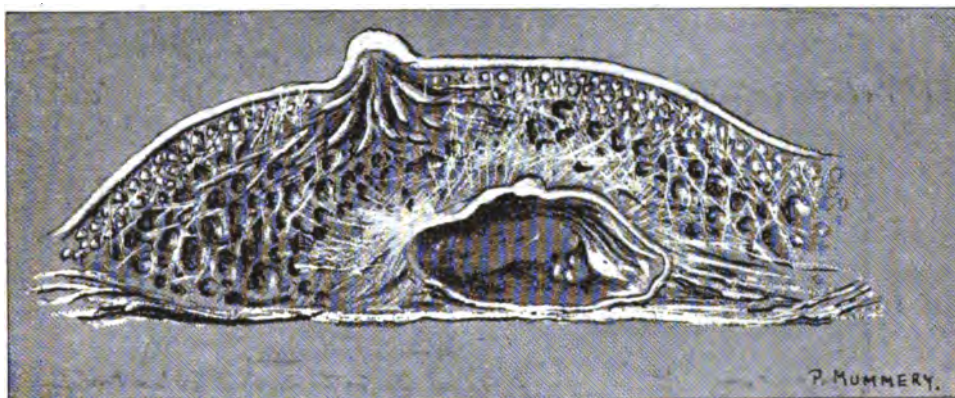
Deeply-seated cyst of mamma simulating cancer.

mamma near the axillary aspect the size of a large walnut. It had been noticed for about four months and was painful. The nipple was stunted, not retracted. The mamma was obviously the site of mastitis, being granulated and thickened on examination with the fingers, while with the flat hand, the tumour when palpated was readily to be felt. The axillary glands were not affected. The skin was not puckered. Near the axillary aspect of the left breast was a tough indurated area which felt nodular at one spot. I much feared, from the heaviness and density of the tumour in the right breast and its apparent incorporation with the mammary substance round, that it would prove carcinomatous. The thought of the same process commencing in the other mamma in an area of

The surgery of cysts in the breast is far from easy. In single serous cysts, where no growth exists in the cyst-wall and the fluid is clear, the cyst itself may be dealt with by tapping and injection, or the dissecting of its walls away bodily. Most of these formations are found in chronic mastitis, and in my experience it is very exceptional to find the cyst really solitary. On section of the toughened mammary tissue round, other small cysts, of the size of a currant or small shot, are cut across, and it is obvious that the remainder of the mammary substance is really in a condition of cystic degeneration. If the gland is left, one or more of these cysts slowly increase and become prominent to cause future alarm and further discomfort. In that rare condition, galactocele, the

milk cyst can usually be safely treated by dissection, the rest of the mamma being left untouched.

But, after all, one of the most important and interesting matters connected with cysts of the mamma is the ease with which they may be confounded with cancer. A small, deeply-seated cyst, surrounded by dense inflammatory material, may exactly simulate hard carcinoma, and utterly confound and deceive a too positive diagnostician, who may, to his chagrin, find he has removed the breast for a simple condition which permitted of less severe treatment. The illustration of the specimen, well drawn by Mr. Mummery, shows admirably the conditions present, and is well worth comparing with the other drawing of sub-

walls. In cases of small cysts found near the nipple bearing one or more flimsy papillary processes, the cysts may be removed and the mamma saved. If the intra-cystic growth is abundant, and especially if the walls of the cyst itself be infiltrated, I feel convinced that removal of the mamma is the safest course to pursue.

Removal of Advanced and Ulcerating Carcinoma of the Mamma in an elderly lady, the subject of Chronic Bronchitis and Dilated Heart. Suppuration. Recovery.

In December, 1898, I first saw this patient, a spare and feeble lady, whose exact age was un-
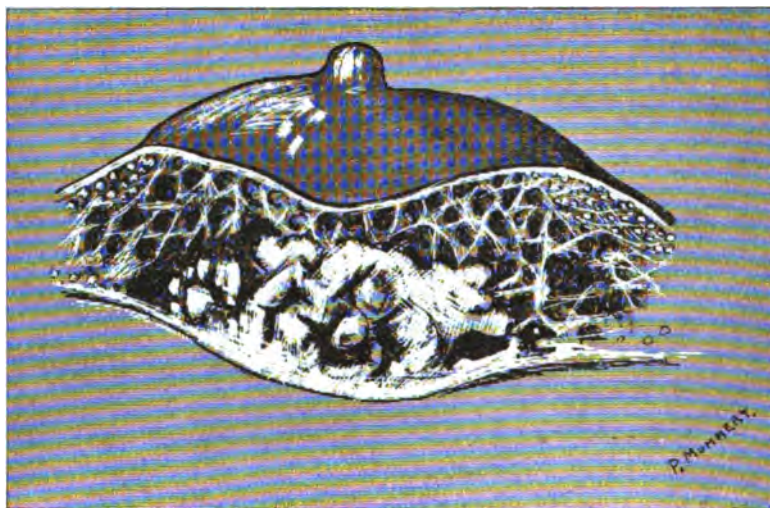
Hard carcinoma in the deeper parts of mamma. The skin and nipple are not affected.

mammary carcinoma. From these excellent plates it will be understood how close the clinical resemblance between deep cysts and cancer may be. In the absence of exploratory incisions it is well for a surgeon not to be too positive in diagnosis. The colour of the fluid in cysts of the breast is of great importance. Bloody fluid is commonly found in cysts connected with carcinoma or sarcoma. In addition such fluid is not watery, but commonly glairy or colloidal. Dark-coloured fluids usually owe their hue to altered blood, and in many of such cases some form of papillary growth will be found upon the wall of the cyst. Great difficulty may be experienced in estimating the correct treatment of cysts bearing papillary growths upon their

certain but considerably over seventy. She had noticed a tumour in the left mamma for about two years, and this had been shown to eminent surgeons, who advised against operation on account of her age and feebleness. She, herself, was also extremely averse to operation under any circumstances. The tumour when I saw it was already livid, and its advancing red tubers could be felt under the skin, which was thinned and adherent. The axilla was apparently quite free, and the tumour moved on the pectoral. Quite appreciating the unfavourable nature of the case, I advised operation, seeing clearly the distressing local conditions which must ultimately ensue. About this time, however, the patient became so bronchitic

and feeble that operation had to be postponed. Under the care of Dr. Symes Thompson she got safely through the winter, and I again saw her in the spring of 1899. Some axillary glands were now enlarged, and the tumour was looking more formidable. Seeing it would soon burst through the skin, I strongly urged operation, which the patient again negatived.

Early in June the expected fungation took place, and the profuse bleeding and discharge terrified the patient, who now desired the operation to be done. The condition of the lungs had, however, improved, and though she was extremely weak it was obvious her condition would soon become desperate, and operation afforded the sole hope of relief. I determined to conduct the operation, with the view entirely of affording palliation rather than radical extirpation.

For two days the skin of the axilla and thorax was purified with soap and water, ether, and a 1 in 500 solution of biniodide of mercury. The ulcerating part of the growth was mopped before operation with pure liquefied carbolic acid. The operation was performed at 9 a.m. on July 11th. At 8 a.m. a nutrient enema, containing the yolk of one egg, strong beef-tea, and brandy, was administered. Dr. Hewitt gave the A.C.E. mixture to a light degree of anæsthesia. The operation was performed in the usual manner with all possible rapidity; the pectoral fascia, superficial layer of muscle, and all enlarged axillary glands were eradicated. There was marked weakening of the strength of the pulse, when the mass, which was of great size, was being removed from the front of the thorax, but this soon passed away, and in half an hour the patient was placed in bed in the sitting posture, warm, and in good condition.

The dressing was maintained in position by a many-tailed bandage, as is my usual practice, and the tube was brought out through an opening in the posterior and lower aspect of the inferior flap. The patient made a good recovery. On several occasions attacks of cardiac weakness occurred. On the fifth day violent pruritus of the integument of the chest wall was complained of, and this was successfully treated by sponging with hot (1 in 20) carbolic lotion. On the seventh day, as might have been expected from the septic nature of the case, some suppuration occurred in the axilla. The pus was very offensive. Under drainage and

frequent syringing with mercuric lotions this soon cleared up, and by the twentieth day the parts were soundly healed.

This case is one of some importance, because it is an example of a rather numerous class in private practice, where operation is refused, or the growth concealed until the disease has advanced to a very serious extent, the patient being weak and anæmic. If old age, a dilated heart, and bronchitis are added, the circumstances are such as to call for anxious reflection. One of the first local conditions which negative operation in aged and feeble women with advanced cancer, is extensive implication of the skin. If there be many " shotty " nodules scattered about the skin of the thorax, or the integument be infiltrated with cancer, producing that condition known as " hide-bound " carcinoma, operations are hardly admissible. A large open wound the size of a soup-plate may have to be left, and the " Thiersch " grafts make other portions of the body sore, so that the stress of recovery is great except for strong and well-nourished women. The second local condition, which is of most unfavourable omen, is fixity of the mass to the chest wall, especially below the pectoral. In an old and feeble bronchitic patient, the extensive operations needful to deal with this condition will probably prove fatal.

A third unfavourable factor, one which was present in the case just related, is ulceration of the cancer. The discharge is of the most dangerous and infective description. It swarms with organisms, among which both streptococci and staphylococci are present. If the newly-cut wound become contaminated, erysipelas is only too likely to arise, and death from septicæmia in these cases is not unknown.

I am sure that the safest practice in these cases is to utterly clear and destroy the whole ulcerating surface with Pacquelin's cautery at the time of operation. I did not adopt this precaution in the case we are considering on account of the fact that I had observed for some days that the whole mamma was inflamed and hot, and that septic action had doubtless spread far below the surface into the mammary substance. I therefore was content to freely treat the ulcerated surfaces with pure carbolic acid. The wound was repeatedly and strongly flushed at the completion of the operation with hot 1 in 1000 biniodide of mercury

lotion. The greater bulk of it at once united, suppuration only occurring at one spot.

This case is of additional interest as showing that fixed rules cannot be laid down in surgery. I have no doubt that this was a case where the sternal pectoral ought certainly to have been removed and all the available lymphoid tissue dissected clean away from the vessels. One can hardly perform this operation quite thoroughly under an hour, and I feel sure that such a feeble patient as this lady might have had her chances for recovery seriously prejudiced by the severity of an operation, which in a younger and more robust woman would have been imperative for modern surgery to undertake. The matter of the anæsthetic calls for a passing comment. I feel sure that in this class of patient chloroform or the A.C.E. mixture are the best agents to employ. The anæsthesia should be slight, so that the aged and feeble patient moves a little or mutters.

The shock experienced at the time great nerves are divided or the mass dragged away from the chest wall usually passes away spontaneously. It is customary to inject strychnia or give rectal enemata containing brandy when this symptom shows itself, but I question whether such means are really needful or, indeed, advisable except in extreme cases.

Significance of a small Induration in the Mamma in a woman of over thirty years of age.

It would seem that the extreme importance of the early recognition, and especially the early treatment, of cancer of the breast is even now hardly appreciated by many of the profession. The following case well illustrates what is perhaps more common than it ought to be, the ignoring of a serious malady, because its evidences are but slight and insignificant.

A lady from abroad, aged forty-two, was sent to me by two well-known medical men in this country, whose names I do not mention for fear of ·identification of the personality of the patient. This lady had always enjoyed good health; she was married, but childless. About a year before I saw her she accidentally noticed a slight hardness in the left mamma. She at once took alarm about it, and consulted a medical man, who pronounced it to be of no consequence. The lump remained, and, indeed, got larger, and she saw several sur-

geons in good practice in the colony in which she lived, who all were unanimous in considering the case of no consequence. One termed it inflammatory, and the usual remedies had been employed. At the end of a year she came to this country for advice, as she felt certain that the swelling had increased. The medical man she first saw here at once took alarm at the state of affairs, with the result that I saw her. On examination the mamma was very voluminous. Above and to the outer side of the nipple a distinct local hardness could be felt deep in the breast, and this could be appreciated by deep pressure with the flat fingers. A distinct abnormal formation was certainly present. The skin was not puckered, the nipple was unaffected, no glands could be detected in the axilla. I declined to give a positive opinion, but strongly urged the importance of at once making an exploratory incision, with full permission to act upon the appearances found, as to the extent of the operation to be performed. This was done in April, 1899. The exploratory incision passed through a quantity of fat mammary structure and some hardened tissue, and opened a small cavity the size of a nut containing blood and colloidal material. The walls of the cavity were obviously formed by carcinoma. A free removal of the gland, fascia, and contents of the axilla was performed. The greater pectoral was also dissected away. No evidence of axillary infection could be found. She made a good recovery. Microscopical examination showed colloid cancer and dissemination throughout a considerable area of the mamma.

The great indignation and dissatisfaction that was expressed by the relatives with the opinions and conduct of the medical men who had seen this case in its early stages, affords a text of warning which we all may lay to heart. It cannot be too widely known that the commencement of cancer of the mamma is very insidious and not attended by any great pain or discomfort. If a woman of the cancerous age gets an abiding patch of induration in the breast, such an induration, however small and slight and insignificant, is a symptom of most serious import, which cannot be ignored. In nine cases out of ten it will prove to be cancerous. If it be not cancerous it will be inflammatory, or a small, deeply-seated cyst, with thick walls. Exploratory incision, with permission to remove the mamma, is the right course to pursue in such a

case. I fear the reason why many medical men persuade their patients that cancer in its early stage is " a mere nothing " is the tendency to avoid the most unpleasant duty of being the bearer of evil tidings. When, however, the case is more advanced, and the patient, or her friends, become dissatisfied, and another opinion is insisted upon, or sought surreptitiously, the truth comes out, and the first medical man is severely blamed, and, indeed, it is hard to defend him. These cases are always difficult, but it may be remembered that a surgeon will retain the confidences of his patients by acting towards them with strict integrity in the matter of serious maladies. As we get blamed for ignoring or overlooking serious disease, so we get praised for early detection of it and prompt treatment. There is another aspect of the question we all have to consider. It is in the early stages, the small beginnings, that operative treatment of cancer is alone hopeful. I have no doubt that if all cancers were removed in the early stage, and the neighbouring lymphatic area also, the results would be far better than we see them to-day.

If patients conceal their malady we are held blameless. But if a medical man, through mistaken motives of kindness, or objections to discuss his patient's case with others, or some other injudicious conduct, connives at the concealment of cancer until the disease has advanced to a hopeless stage, then retribution will certainly fall upon him, and his practice and local reputation may surely suffer. Many of the more awkward differences which occur between medical men originate in this way, and these remarks may well be laid to heart by those who wish to study their patients' welfare in conjunction with their own reputation and interests.

One of the most inexplicable matters concerning carcinoma of the breast is the slow growth and quiescence of the disease in certain individuals; the following are examples of it.

On December 12th, 1898, I saw a patient of Dr. Stokes, of Onslow Square, who was seventy years of age, and had borne a carcinoma of the mamma for no less than fifteen years. She had suffered no pain. The general health was quite unaffected, and she was florid and well-nourished, just the sort of person, indeed, in whom one might have supposed that carcinoma would have grown rapidly. The axillary glands all this time had remained quite unaffected. Just beneath the left nipple was a hard puckered tumour the size of a small orange. The nipple and skin near it were drawn down and attached by hard puckered cords, the parts having a strangely contracted appearance. The tumour was not adherent to the parts beneath.

The second case was as follows. A widow, aged sixty-seven, noticed a tumour in the left mamma twenty years ago. It has caused her no inconvenience whatever. In the last two months there had been slight ulceration of the skin, for which she came to the Waterloo Bridge Hospital and sought advice. There was an obvious secondary growth in the sternum, which was thickened, and one enlarged gland was to be felt in the axilla. The general health was good.

It must be clearly understood that these cases are quite exceptional, and no one can count on a case of cancer of the breast taking this course. The usual and ultimate result of cases of atrophied cancer is dissemination through the osseous system and fracture of the bones. In a fracture of the femur, for instance, occurring from a slight cause, in an elderly woman scirrhus of the mamma will often be found, small, quiescent, and quite unsuspected.

The question of treatment of these cases is still a vexed question. Generally the patients decline to have the disease touched, and the usual counsel was to leave these cases alone. In old or feeble persons I should still be inclined to follow this advice. The results of operations for radical extirpation of atrophied carcinoma would probably be very good, but they are performed for a condition which in certain individuals is scarcely at all inimical to the general health or to longevity. Whether extirpation of an atrophied cancer which had existed for many years would prevent subsequent osseous metastases is at least very doubtful. It is probable that the medullary tissue of bone is infected in these cases far earlier than is generally believed. I may conclude by stating my belief that there is no evidence now before the profession from trustworthy sources that life is prolonged by operations on atrophied cancer.

Hæmorrhage from the Nipple.

In April, 1899, I saw a very stout lady, aged sixty-five, who gave the following history:—For

four months she had noticed bleeding from the nipple. It varied in amount, but was almost invariably present to a greater or less degree. Lately the blood had squirted out in such quantity that it soaked her clothes. She had ceased to menstruate for some years.

On careful examination of a very fat breast, a slight but distinct swelling the size of a small bean could be felt below the nipple. Firm pressure upon this with the finger caused blood to exude in a stream from the nipple. Some of the fluid was collected. It was rather a highly albuminous serum than pure blood. The diagnosis of this case was clear: a small, deeply-seated cyst of the " duct obstruction " type containing papillomatous growths.

By the singular coincidence, which we observe in cases of interest, I saw an exactly similar instance of this affection in an elderly woman at the Waterloo Bridge Road Hospital in April of this year. Bloody serum flowed at intervals from the nipple, soaking her clothes, and a fairly-marked oval swelling about the size of an almond occupied the breast near the nipple. This could be distinctly emptied by pressure, and was evidently a cystic dilatation of one of the larger ducts. In neither case was any treatment permitted.

There can be no doubt that in cases where bloody fluid is discharged from the nipple, the common, usual, and important cause is the discharge from a cystic dilatation of one of the larger ducts. This fills up from time to time, gets tense, the obstruction is overcome, and a discharge from the nipple occurs. The source of the hæmorrhage is almost invariably one or more small primary papillomatous growths on the cyst wall. The symptom is of serious import, for often enough these cases became carcinomatous, the proliferating epithelium infiltrating the wall of the cyst and the mammary tissue around. These papillomatous cysts in the breasts of elderly women may be looked upon as potential carcinomata. We may regard them with the same clinical suspicion as a wart upon the face of an elderly person. In both cases the patient may carry the affection for years unharmed, yet we never can tell when serious pathological changes are going to occur. There can be no doubt that the correct treatment for these small cysts is to freely dissect them out with a liberal allowance of mammary tissue around.

The exact position of the cyst should be marked on the skin in indelible pencil before the operation, when the cyst is tense and easily to be defined. If the wall of the cyst be thickened, and the mammary substance round indurated, free removal of the whole mamma is decidedly to be urged, with the fasciæ and lymphatic contents of the axilla.

Vicarious menstruation from the nipple is exceedingly rare. Undoubted instances of it are recorded, and it is diagnosed from the cause above mentioned by the periodical and profuse nature of the flow in a young girl or woman. A good instance of this rare phenomenon is recorded by Dr. Robert Barnes in the ' Medical Press and Circular ' for 1886. In some of the recorded cases occurring about the menopause I feel sure that the observers have overlooked a small, deeply-seated cyst, which, as I have pointed out above, may be very faintly marked.

Lastly, it may be pointed out that in suckling women blood sometimes flows with the milk. I have only seen one such case, and this was undoubtedly due to rupture of some small vessel in the walls of the duct, from the dragging upon the nipple by the infant. The patient was a pale and delicate woman and her skin bruised easily. She afterwards got an ecchymosis upon the wall of the chest from a slight blow from the infant's head.

Acute Mania after Removal of the Mamma probably due to Iodoform Poisoning.

In April, 1899, I operated upon a spare, thin woman, aged fifty, a patient of Dr. Wynne, of Limpsfield, for hard and advanced carcinoma of the right mamma. The patient had noticed the disease for eighteen months, but I was of opinion it had lasted longer. The breast was converted into a cancerous mass and fixed to the pectoral beneath ; the glands in the axilla were much implicated. Her mother, it was stated, died of cancer of the uterus. There were other suspicious symptoms about the case. Lumbar pains were complained of, radiating down the lower limbs, also a sensation of numbness in one great toe. These signs were very indicative of a secondary deposit of carcinoma in the lumbar spine, and I so regarded them. On the other hand, operation was much desired, and the local conditions threatened

to become very distressing, so I consented to operate, but with some misgiving as to whether I was acting for the best interests of the patient.

The operation was a very extreme 'one, the mamma and much skin, with the whole pectoralis major muscle, being removed. A large mass of diseased glands was taken from the axilla, and, so far as could be ascertained at the end of a tedious proceeding, the whole disease seemed to have been removed. There was some difficulty in getting the skin to cover the extensive wound, and lateral incisions were made in several places to relieve tension. The wound was painted over with rather a strong solution of iodoform in collodion, and the axilla packed with iodoform gauze. To this I attribute the unfortunate result which occurred.

On the second day the patient became acutely maniacal, and the temperature gradually rose to 104°. The wound, which had been drained, was at once inspected, but it appeared healed. Notwithstanding stimulation, antiseptics, and cool sponging, this patient sank on the fourth day. I regret that the urine was not examined. The leading features of the case were uncontrollable delirium and a high temperature. The examination of the body showed absolutely nothing to account for death. The wound was healed and the cavity filled with firm plastic lymph. The axillary vein contained a post-mortem clot. There was an entire absence of blood extravasations, mottling, or any of the usual signs of septic action. The lining membrane of the heart and great vessels was not stained. The examination was conducted too long after death for a reliable bacteriological examination of the tissues to be made.

Notwithstanding the unfavourable termination of this case, I have thought right to report it, because it illustrates the important truth that no surgical operation, however generally successful, is quite free from risk. This is the first case I have ever lost after amputation of the mamma. The operation was done with every precaution, the instruments and skin being disinfected with scrupulous care by Dr. Méchod, who assisted me. I much fear that the liberal use of the iodoform emulsion was the cause of the disaster. In connection with this it may be remarked that Mr. Pridgin Teale has experienced just these symptoms in breast cases after the use of iodoform.*

* Author, 'Diseases of the Breast,' p. 427.

In the year 1894 I injected three drachms of iodoform emulsion into a large psoas abscess which had been opened in the loin, flushed and scraped.

The operation was a very extreme one, the ptoms of hyperpyrexia and delirium followed, so that I feared septic absorption. The patient was with difficulty saved by free stimulation and the administration of strychnine. The symptoms suddenly ceased on the fifth day and he made a good recovery. I have known of two fatal cases which have not been reported in London practice in the last two years. In the one iodoform was used in an amputation, with a fatal result certainly attributable to the drug. There is no doubt that certain patients are peculiarly liable to iodoform poisoning. In the majority of instances the drug may be used freely and nothing happens. The danger is, however, a real one. In cases where slough exists, or about foul intestinal abscesses, I should not hesitate to use iodoform freely. In fresh wounds, and about freshly-made incisions, it is perhaps better to avoid its use.

TREATMENT OF FLOATING LIVER.

By Max Einhorn, M.D.

THE treatment of floating liver resembles, on the whole, that of enteroptosis, and especially that of floating kidney. Here, also, the chief measure is the application of well-fitting abdominal bandages, which support the lower half of the abdomen in an upward direction, and increase the tension of the abdominal walls. A special pad for pressing the liver still farther back is of as little service here as in floating kidney. Aside from this, so to speak, orthopædic treatment of the abdomen, other physical and dietetic means must be considered. General massage and hydrotherapeutic measures, which have for their aim the strengthening of the organism, are of high value. In the front rank of all these methods is an appropriate diet. In most weakly individuals an abundant diet (or rather forced feeding) must be prescribed. The patient should be directed to take as much food as other healthy persons, and a little more. If besides the ordinary diet an additional quarter of a pound of butter is ordered daily, much will be accomplished by this means alone, and most of the patients will soon show an increase in weight. On the other

hand, persons who are heavy eaters and rather inclined to corpulency should reduce the amount of food within proper limits.

Gymnastic exercises in the open air, and, in cases with a tendency to constipation, special exercises for the abdominal muscles, are likewise of value. Occasionally, particularly when the gastric and intestinal symptoms are strongly pronounced, these must be treated according to the commonly accepted rules.

In surgical practice the attempt has been made to remove the disease by suturing the liver to the abdominal walls. Such operations have been performed by Billroth, Tscherning, Marchant, and Richelot. It seems, however, that these operations have never attained any popularity, and probably will not come into general use. As already remarked above, we know indeed that floating liver is commonly one of the phenomena of enteroptosis, and that through an operation (hepatopexy) the original trouble is not removed. Here also, as in the case of floating kidney, I am completely in favour of medicinal treatment—that is, mechanical and dietetic,—and am opposed to operative procedures.

Permit me to say a few words regarding the clinical significance of this affection. It appears that this affection is not of such rare occurrence. Every physician now and then will have occasion to discover cases of floating liver by means of accurate examination, and should therefore give this disease his attention. In the second place, recognition of floating liver is of special importance, since otherwise errors in diagnosis may be made which may prove detrimental.

In the last two years I have met in my own practice with four cases of floating liver, in which well-known physicians in New York and Philadelphia had been led to make errors in diagnosis. In three cases of floating liver in women the diagnosis of gastric cancer had been made, owing to the presence of a tumour situated below the right border of the ribs and extending toward the left. In one case of floating liver in a man the diagnosis of appendicitis had been made by one physician, and of gall-stones by another, and both advised urgent resort to operative treatment. The patient, however, soon recovered after the application of a simple abdominal bandage.

The group of cases of floating liver with hepatic colic is often confounded with cholelithiasis. I have certainly observed five cases of this kind in which erroneous diagnoses had been made. One of these cases I reported about six years ago to the Society of Physicians of the German Hospital and Dispensary. The subject was a man sixty years old, who for ten years had frequently suffered with violent colicky pains in the region of the liver, so that injections of morphine had always to be administered for the relief of the attacks. The patient had gone through all the various gall-stone cures, but without the least improvement. Operative procedures had therefore been advised by almost every one of the medical men whom he had consulted. The patient, however, objected to an operation, and in the course of his wanderings happened to come to me. I detected a typical floating liver, and ordered the patient to wear a well-fitting abdominal bandage; and since that time he has had no further attacks, and has enjoyed perfect health.

Medical Record, Sept. 16th, 1899.

RINGWORM AND OTHER SCALP AFFECTIONS: THEIR CAUSE AND CURE. By Hadyn Brown, L.R.C.P. Edin. (London: J. and A. Churchill, 1899.)

The author of this volume appears to have given considerable attention to the practical treatment of the affections which he discusses, and the results of his experience merit careful consideration. He is of opinion that the energy and enterprise of " searchers and researchers " in seeking for and differentiating various species of organisms have proved of little practical moment, and have indeed tended to distract attention from the real significance of these affections, and from the true methods of their cure. His view is that ringworm, favus, alopecia, seborrhœa, impetigo, &c., are "local signs of dyscrasias," and indicate the necessity for treatment of the general health ; local measures he considers of purely secondary importance. On these lines he offers some useful hints, and in his general argument he makes out a very fair case for his position, which he claims has the justification of "unbroken success." The literary style of the book is extremely diffuse, and displays a passion for the exclamatory and interrogative methods, and for the martial and dramatic similes so dear to the youth of our debating societies. But amidst all this there is something of practical value which may help the practitioner in his daily difficulties.

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* *Specially reported for The Clinical Journal. Revised by the Author.*

NOTICE.

A CLINICAL LECTURE

ON THE

MEDICAL USES OF ELECTRICITY.

Delivered at the National Hospital for the Paralysed and Epileptic, Queen Square, London, July 4th, 1899, by

JAMES TAYLOR, M.A., M.D., F.R.C.P.,

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GENTLEMEN,—I had this patient here for preliminary testing, and will therefore demonstrate her reactions before proceeding with the lecture. It is an ordinary case of facial paralysis on the left side, so-called Bell's paralysis, resulting from inflammation of the nerve, so causing such complete paralysis of the upper part of the face that she is unable to close her left eye. This, of course, is clearly distinct from the facial paralysis which results from a brain condition. In the facial palsy due to a cerebral lesion it is very rare to get the upper part of the face affected to such a degree as not to allow closing of the eye. Still, she makes a better attempt at closure than she did eight weeks ago when her illness commenced. Reaction of degeneration is present. The reaction of degeneration, as you know, consists in an absence of faradic reaction and the presence of galvanic reaction in a changed manner. That is to say, instead of the cathodal closing contraction being greater than the anodal closing contraction, the anodal closing contraction may be greater than the cathodal closing contraction. The essential point about the reaction of degeneration is that the faradic reaction is lost or very much diminished and that the galvanic reaction is changed; there is a change in its polar relations and also in its character; it is a slow, sluggish contraction. When I stimulate this patient's right nerve there is a fair contraction, with a strong current, of the muscles about the eye and of most of the muscles about the mouth. On the affected side there is no reaction. She evidently feels the current on the affected side,

and if we try a stronger current it produces a certain amount of pain. On the affected side the galvanic current produces a deliberate worm-like contraction.

In medical practice there are three forms of electricity of which we make use. First of all there is the statical form, which is often extremely impressive and is very useful in treating cases mostly of more or less obscure conditions which may be regarded as functional. We use it a little at this hospital, but not a great deal, and it is the sort of electricity which one would not be inclined to use freely in practice, because we are ignorant of any definite effects which it produces.

As regards the ordinary medical uses of electricity we have to deal with two forms. First of all there is the constant or galvanic current. It is called the constant current, because when the poles are applied to any particular part the current is continuously passing, although its effect on motor structures is only produced when the current is made or broken. If you keep the poles too long applied to any part of the skin you will get blistering. The current is generated in a large series of cells. In most batteries there is a series of forty cells which are connected up in a special way, and from these a certain number are picked out according to the strength of current required. Some batteries are made with a single dial and others with a double dial, by which one is able to pick out a certain number of cells from the beginning, the middle, or the end of the battery. That is a convenience, because then you do not use the same cells every time and consequently they do not readily run down. The ordinary form is this with a single dial, in which you can go on using cells until they are exhausted, and then you can use certain others which are in the circuit.

The other form of current which is used is the interrupted or faradic current, also called the induced current. In the battery for this current we have the current generated in one or two cells, and in this form the cell element has to be much larger, as a rule, than it has to be in the constant current. It is spoken of as the induced current, because the current used on the patient is induced in a coil. Here are the cells which generate the current, and there is a coil directly connected with these cells. Over it is an induction coil consisting of a large number of turns of very fine wire, and in

this coil a current is induced, not by contact but by mere proximity to the primary coil, and according to the degree of nearness of the secondary to the primary coil so is the strength of the current induced. It is this induced current which is taken off and applied to the patient. There is often an error made in reference to this current. It is often spoken of as the constant current, because it makes a noise which seems to be continuous. As a matter of fact, the noise is caused by the frequent automatic interruptions of the current.

Now, these two forms of electricity are used for two particular purposes. If you stimulate with the interrupted current you get a reaction from the different nerve points—what are called the motor points. With this current you only get a reaction through the nerve. On the other hand, with the constant current you can get a reaction not only in the nerve itself but also in the muscle. That is to say, if you cut a muscle off entirely from the nervous supply you still get a reaction to the constant current in that muscle. That is well seen in a patient with facial paralysis; there you have certain facial muscles entirely cut off from the motor nerve supply, so that the impulses coming from the brain are stopped, and the muscle is to all intents and purposes cut off from its central nucleus. Thus, as there are no nerves through which the stimulus of the interrupted current can be conveyed the muscles are not affected by that current. On the other hand, with the constant current one gets a good reaction in the muscles. That explains why we use a certain current for certain cases. I do not think there is any evidence of any good having been done by electricity to motor structures unless it is capable of producing muscular contraction, and what we have to do is to stimulate muscles by its means which are incapable of being stimulated by the will—that is to say, muscles which it is impossible for voluntary impulses to reach; the object being to maintain their nutrition until the structures are once more capable of transmitting physiological stimuli. In health we get reaction from the motor points with the interrupted current; and we also get a reaction from the motor points and in the muscles themselves by the galvanic current. The interrupted current, then, only stimulates nerves, but the galvanic or constant current stimulates nerves and

muscles, and the latter whether they are cut off from nerves or not. This is really the whole secret of the use of the different forms of electricity for motor effects. If we have structures in which it is impossible to produce faradic reaction, naturally one does not use the faradic battery; but where galvanic reaction can be obtained we use the galvanic current.

We might now, I think, consider the question of medical treatment under the various conditions in which electricity is used, and the reasons why such a current is used in certain cases.

So far, I have only spoken of the motor conditions for which electricity is used; but there are also certain sensory conditions in which medical electricity is undoubtedly useful. For example, we have various painful conditions associated with disease of the spine, for instance, spinal caries, and in that condition, more especially in old people, there is a great deal of pain, a pain which is very often of a girdle character, passing round from the diseased spot in the spine to the front. In such conditions, although it is not invariable, I have known the use of the constant current give very considerable relief. I mention this because I think it is useful to know in certain cases of that kind what may perhaps benefit the patient, because in such diseased states one is often at one's wits ends in order to provide something to give relief. One naturally has a great aversion to using morphia in such cases, at all events to using it early, because often in such patients we have to resort to morphia before death.

As to the use of the constant current in sensory conditions to relieve pain, I do not think it is of very much importance which pole you use. It has been stated that more relief is obtained by using the negative pole as the fixed one and stroking the affected part with the positive pole, but I do not think it matters which is fixed in regard to the relief of the pain. As a rule, I think you will find it is much better to let the positive pole be the fixed one, because then there is not so much tendency to blistering as if the negative be fixed. However, if you find the use of the negative pole as the fixed one affords more relief to the patient you should use it thus.

The condition of tabes is one in which electricity has been used a great deal, first of all in order to increase the strength. But, of course, in

tabes the muscular power is very good; it is the sensory side which is disturbed. Electricity has been also used to relieve, if possible, the lightning pain and the other sensory disturbances which may be present. I have known cases of tabes in which there was considerable anæsthesia present benefited to some extent by the use of a wire brush to stimulate the skin; and I have known a certain amount of relief afforded to lightning pains by using galvanism. But, as a rule, I do not think much is to be hoped for from the use of electricity for the relief of pain in tabes. As you know, we have other means by which we can relieve the lightning pains in tabes, which are much more accessible and convenient than the use of a more or less complicated battery.

Another condition of a very painful nature which we sometimes have to deal with in this hospital is rheumatoid arthritis, and I have known very great relief afforded in that disease by galvanism applied in the electric bath. This is simply an ordinary bath with one of the poles immersed in the water and the other stroked over the painful parts. So there is nothing mysterious about the electric bath; you can give one with an ordinary bath and an ordinary galvanic current.

Another painful affection in which electricity has been used is trigeminal neuralgia. In this country, however, it only seems to have been applied for its relief in a half-hearted way. On the Continent it has been applied for the condition much more extensively and systematically, and it is worth considering whether we should not do more in this country in the way of the electrical treatment of such conditions. My own experience does not embrace very many cases of this kind, but I have seen a few treated in that way here both with the faradic and the galvanic current, and I must say my impression is not very strong that great benefit is obtained. I have known galvanism seem to relieve the condition temporarily, but I have never seen anything like a permanent cure of facial neuralgia by the use of galvanism. Still I have had but little experience of a long and systematic treatment of such conditions by this method. The condition of spasm of facial muscles, which is very disagreeable and painful, often excited by some painful emotion, is also one which may be treated by means of the constant current. It has seemed to me that the use of the

constant current in some cases of facial spasm has seemed to allay that spasm. Other cases have not been benefited to any extent.

Electricity is also very useful in sciatica; it is useful, first, in relieving the pain, which is often severe, and, in the second place, it is useful in stimulating muscles which have become wasted, and thus aiding their growth. In sciatica itself the best current to use is the constant current, and it is best used by getting the patient to lie with one of the flat conductors over the sciatic area, the other pole being stroked over the distribution of the nerve. I have known very great benefit, and, indeed, practically complete relief afforded in sciatica from comparatively few applications of the battery. I have also seen the condition very considerably relieved by the application of the faradic current. One would think that by stimulating the muscles and causing pressure to be exerted on the sciatic nerve the pain would be increased, but that is not so in all cases, and in certain cases the faradic current seems to answer in the same way that a galvanic does in others. But one must be prepared to give the patient a certain amount of pain in sciatica in the application of electricity.

The disease known as exophthalmic goître has also been treated by electricity, more especially by the French and Germans, by whom the treatment is carried out somewhat elaborately. First of all the eye is galvanised with the view of influencing the exophthalmos, then the thyroid itself is galvanised. In another mode of treatment the heart is galvanised, one pole being placed over the heart and the other over the goître, and the same elaborate form of treatment is carried out. As far as my own experience has gone, however, I cannot say it has been of much benefit. Some of the cases of Graves's get better, some invariably go to the bad. Those which I have seen go to the bad have done so chiefly through intractable diarrhœa. The other cases have apparently improved under the use of atropine and belladonna. On the whole, then, although I have not had very many cases, in none of them have I been able to satisfy myself that galvanism was of any good in goître. Still it as been advocated strenuously in certain places, and therefore it is only right I should mention it.

So much for sensory treatment. As regards motor conditions, of course I have already hinted

at the conditions which guide us in the application of electricity in different forms of disease. I might just say that if you regard the motor nervous system as consisting of two segments, the upper and the lower, you get a very easy guide for the use of the battery, and you get also a constant guide as to the reactions which you may expect in any given case of disease if you know where the lesion is. The upper motor segment extends from the pyramidal cells in the cortex to just above the anterior horn cells in the cord and medulla, and the lower motor segment extends from the motor cells in the anterior horns of the spinal cord to the muscles themselves. If we have any lesion in the upper motor segment the electrical reactions will not be interfered with at all. The nerves will react normally, and so will the muscles. If, on the other hand, we have a lesion in the lower motor segment, then the electrical reactions are changed. The extent, degree, and nature of the change, of course, depends upon the severity of the lesion. But the broad general rule—and it is a very definite rule—is that when you have an uncomplicated lesion of the upper motor region you get no change in the electrical reactions; if you have a lesion in the lower motor segment you will get some change in the electrical reactions. If you consider what conditions affect the upper and what conditions the lower segment, you will see what I mean. In hemiplegia we have an example of a typical lesion of the upper motor segment, which is absolutely restricted to that segment; consequently we have in that condition no change in the electrical reaction. If we have a patient with paralysis of the left or right hand you will find that, unless there is some complication present, the muscles will react well to the faradic current; that there is no change compared with the opposite side; or, if there is any change, it may be because there is a smaller bulk of muscles on the affected side owing to the wasting.

In spastic paraplegia we have a condition of the spinal cord in which its pyramidal tract or lateral column is affected with sclerosis. In such a condition also there is a lesion of the upper motor segment, but it is not a mere local lesion. You may have a lesion of what is called the upper motor segment situated topographically below the point where there are anterior horn cells; and, as the pyramidal tracts extend right through the cord,

you may have the legs completely paralysed from disease of these tracts, and yet they may react perfectly to each kind of current.

Those are two typical conditions of lesion of the upper motor segment, one in the brain and the other in the spinal cord ; and in both of these conditions—hemiplegia and spastic paraplegia—we have the electrical reactions normal.

In the lower motor segment, first of all we may have a lesion in the anterior horn cells. We may have the condition of infantile paralysis, which is a result of an inflammation in the anterior horn cells themselves. Or we may have a more chronic change in the anterior horn cells, as in progressive muscular atrophy. In both of those diseases the reactions are very materially changed. In infantile paralysis the electrical reaction is completely lost in the muscles which are destroyed, and in progressive muscular atrophy the reaction is changed in the muscles which are affected. The change depends on the degree of affection of the anterior horn cells. In progressive muscular atrophy we probably have a gradual wasting of the cells, cell by cell, so to speak, and associated with this a gradual wasting of muscular fibres, so that you may have a muscle very much wasted, but not completely degenerated, so that there are some healthy fibres left, and therefore by stimulating with a strong faradic current you may get reaction in those few healthy remaining fibres, while in the rest of the fibres there may be a reaction of degeneration, the muscle rapidly dying. In such a condition you may have reaction of degeneration present in one part of the muscle, and a normal reaction in another part. That explains why in many cases of progressive muscular atrophy you have these curious and apparently anomalous results in the reactions.

Besides these lesions affecting the anterior horns we may have lesions affecting the nerves themselves, the nerves below the anterior horns. The condition of Bell's paralysis, of which I showed you an example at the commencement of the lecture, is a typical case. Here there is a lesion in the lower motor segment between the facial nucleus, which is an analogue of the anterior horn cells of the higher level, and the nerve. In that case you saw that there was complete loss to faradic excitability, and there was a change in the galvanic reaction, that is to say, the condition which we know as reaction of degeneration. In a similar way we may have a wide-spread affection of nerves, such as occurs in alcoholic neuritis, and in the muscles which are supplied by the affected nerves there may be the reaction of degeneration, the nerve being completely inflamed. If a nerve is only partially affected we may get an electrical change, which consists merely in a greater difficulty in evoking contraction with a definite strength of current ; that is to say, a stronger current is required than normally to evoke a contraction in the muscle supplied by the nerves partially affected. Thus, in alcoholic neuritis you may have a varying condition of reaction in the same limb— I will not say in different fibres of the same muscle, although it is conceivable that this may occur.

There is one other structure in the lower motor segment which suggests itself as the seat in which electrical changes occur, and which may be treated by electrical methods, namely, the muscles themselves. There is a large class of myopathies, and those of you who were here ten days ago will remember the cases I showed you embracing pseudo-hypertrophic paralysis and muscular dystrophies generally. Those are supposed to be diseases of muscular tissue, and in those diseases we have a lesion of the lower motor segment, and consequently there is a change in the electrical reactions. The change in the electrical reactions in these cases is usually proportional to the changes in the muscles themselves. Therefore, if you have a muscle which is very much degenerated and not acting at all, there may be no reaction present of either kind. If you have a muscle which is only partially affected you will get a reaction to each current, but not such a strong reaction as in health. The general rule in those myopathic cases is that the electrical reaction is reduced in proportion to the wasting of the muscular substance.

I have not said much about the different current to use, and why one should use a certain current in those cases; but that is quite obvious. In lesions of the upper motor segment you use the faradic current if you wish to stimulate the muscles, and in lesions of the lower motor segment you use the galvanic. It is doubtful if generalised faradism is very good in hemiplegia, but there is one condition in that disease which you can relieve by the faradic current. In hemiplegia the tendency is towards

flexor contracture ; the hand flexes into the palm, and the hand bends at the wrist, and generally the condition is one in which flexion predominates. In a case in which that contracture is taking place you can often do something to mitigate the contracture by stimulating the extensor muscles of the hand and forearm, and you can thus minimise the contracture, which would be greater if the parts were left alone. One combines those with other measures which bring relief—such as massage. In spastic paraplegia, in the same way, one would use faradism for stimulating ; but I do not think it is advisable to use it in those cases in which there is an increase of spasm because discomfort arises.

What I mentioned in connection with Bell's paralysis is true also of alcoholic neuritis. One uses galvanism to get out of the muscles the best contraction possible, so as to keep up their nutrition until the inflamed nerves have been restored to their physiological activity once more.

Besides being used for medical treatment, electricity is useful for testing ; it is useful for diagnosis and for prognosis.

With regard to differential diagnosis, we have sometimes conditions in which doubt arises whether a lesion is one of the brain or of the spinal cord, and more especially whether it is one of spinal infantile paralysis or of the cerebral paralysis which occurs in children. In such a case faradic electricity provides us with the most absolute means of telling whether the anterior horns are affected or not. If you find the muscles react normally to faradism, you know you are not dealing with anterior cornual disease, and that therefore it is not infantile paralysis ; and if doubt has arisen in such a case, you can at once know by this means that the brain or the lateral column is at fault. Various other diseases will also at once occur to you in the same connection.

As regards prognosis, electricity is very useful in such a case as we first saw to-day—one of facial paralysis. Where we have a case of that kind, with no faradic reaction at the end of two months, and with only a sluggish reaction to galvanism, we may be sure that that patient will not completely recover. No doubt the face will improve, and the deformity will become less as time goes on, because, although the muscles do not regain their function, a certain amount of contraction takes place, and fibrous tissue forms in the muscles, and the defor-

mity in the face becomes less distinct than it is now. The contracture becomes so great that if one sees the face twelve months hence one might think it was the other side which was paralysed. I have known the wrong side of the face in a case of old facial paralysis treated in this way by mistake. If the girl you saw to-day had been here within ten days of the onset of the facial paralysis, and we found there was present a certain degree of faradic contraction, we should have been quite satisfied that she would make a good recovery, and that her recovery was one rather of weeks than of months. If at the end of ten days you get a good faradic reaction, the prognosis is a good one, and recovery is merely a matter of a short time comparatively.

Those considerations, then, illustrate the nature of the problems with which electricity can help us. They are, perhaps, not a great many, and perhaps they are only obscure cases ; but I think that, next to knowing the means of curing and relieving a great many diseases, it is most useful to know what not to do. I think the use of electricity in medicine is restricted within a very narrow sphere. In certain sensory affections I think there may be a definite amount of relief by its means, and in a certain number of motor affections one may by electricity keep up the nutrition of muscles until the natural functions are restored. But beyond that, I think that electricity in medicine is of very limited benefit, and is not, perhaps, to be very strongly recommended.

[Dr. Taylor then demonstrated the electrical reactions on cases of facial paralysis in a girl aged thirteen, double facial palsy in a woman of middle age, and a man aged about fifty, the subject of paraplegia.]

Reconstruction of a Perfectly Functionating Anal Sphincter from the Levator Ani and Glutei Muscles.

— By Dr. Lennander ('Centbl. f. Chir.,' June 24th, 1899). The author has devised an original operation for the restoration of the anal sphincter in a case in which it had been destroyed by a phlegmonous ulceration. The opening into the rectum admitted three fingers, and electrical stimulation failed to reveal any contractility of the anal sphincter. Subsequent examination, after a successful operation had been performed, showed a local anæsthesia in the area about the anus and in the mucous lining of the gut, which made it probable the nerves had been destroyed as well as the muscle.—*Post Graduate.*

FOREIGN BODIES IN THE PHARYNX AND ŒSOPHAGUS.

ILLUSTRATED BY A SKIAGRAM.

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FOREIGN bodies lodging in the pharynx and œsophagus, giving rise to alarming and occasionally fatal results, are by no means uncommonly met with in general practice, and require very prompt treatment.

Foreign bodies of the most varied kinds have been found in the pharynx and œsophagus, and are generally introduced through the mouth. In a few cases the substance has been vomited up from the stomach and become impacted in the œsophagus; in others the foreign body has been introduced by wounds from the outside. Among the substances that I have come across have been portions of food, such as lumps of meat, and fragments of crust, &c., small fish-bones, pins, and fruit stones, also coins, bits of bone, and tooth plates.

FOREIGN BODIES IN THE PHARYNX.

A predisposition to the lodgment of foreign bodies in the pharynx may exist through impaired sensibility of the pharyngeal mucous membrane, some abnormality in its walls, or more usually from carelessness in eating.

Large substances, such as lumps of half-masticated food, are usually arrested at the lower part of the pharynx, that is to say, over the upper margin of the larynx, or between the base of the tongue and the epiglottis. They may, therefore, if not promptly removed, cause death from rapid asphyxia.

Foreign bodies, such as pins, fish-bones, or any other small sharp-pointed substances, are frequently met with, and often give rise to much difficulty in removal, especially if there be much spasmodic contraction of the pharynx and œsophagus.

Such bodies usually lodge in the tonsils, or about the pillars of the fauces, especially behind the folds of the posterior faucial pillars. They may, however, lodge in any part of the pharynx.

Symptoms.—Small sharp bodies cause pain, give rise to injuries, and produce dysphagia; if severe inflammation ensue, they may cause difficulty in respiration. In a few cases pharyngeal abscess has been caused and the foreign body has been found in the abscess cavity. Another source of serious danger is hæmorrhage from perforation of some large blood-vessel; this is, however, more likely to occur when the foreign body has lodged in the œsophagus.

Tooth-plates, which have become dislodged during sleep, coins, especially in children, and bits of bone or gristle introduced with the food are among the commoner large substances that may gain entry to and lodge in the pharynx. They usually give rise to symptoms of asphyxia and require very prompt treatment.

As a rule, the history of the passage of a foreign body, followed by discomfort and pain in the region of the impaction, dyspnœa, laryngeal spasm with bad cough, the sputa of which may be tinged with blood, and dysphagia are the symptoms leading to a diagnosis.

If a patient presents himself with the history of a foreign body in the pharynx, it may, if large enough, bulge sufficiently to be seen on inspection, or it may be detected by the finger, laryngoscope, probe, or Röntgen rays.

In many cases I have seen, on careful examination nothing has been discoverable, and no harm has ensued. It is presumable in such cases that a foreign body, generally sharp-pointed, such as a fish-bone, has been either swallowed, causing a scratch, or else ejected a short time after its lodgment.

Treatment.—Where a fatal issue is imminent from asphyxia, an immediate attempt should be made to dislodge the foreign substance with the finger, and, if it be too tightly impacted to do so, the surgeon must be prepared to at once perform laryngotomy.

If the symptoms be less urgent, a thorough search should be made under cocaine, both with the finger and laryngoscope, of the pharynx, tonsils, pillars of the fauces, larynx, and upper part of the œsophagus. In this way the foreign body can frequently be felt and seen and removed with suitable forceps; great gentleness, both in exami-

nation and removal, should be exercised. In children, as Mr. R. Jones has pointed out, it is well to have the head lowermost when exploring with the finger, as there is less likelihood of dislodging the body into the trachea or œsophagus if this upside-down position be observed.

Plates of artificial teeth, coins, and such like bodies can generally be extracted with the aid of forceps or a coin-catcher.

The use of a probang is to be condemned. As a rule, the foreign body is comparatively harmless in the pharynx, and is often driven into the larynx, or even into the bronchi, or may become impacted in the œsophagus, and great damage may be done to the soft parts.

If careful and prolonged attempts at extracting the foreign body fail, and the offending substance be a tooth-plate, or such like hard angular body, the surgeon should lose no time in performing pharyngotomy.

The sensations frequently experienced, and often lasting for some time after the extraction of a foreign body from the pharynx, are best alleviated by the sucking of small pieces of ice.

It must also be remembered that sometimes two foreign bodies may have lodged at the same time in the pharynx without the patient being aware of the fact, and hence, if the sensations remain after the removal of the foreign body, a further careful examination should be made.

FOREIGN BODIES IN THE ŒSOPHAGUS.

It would be impossible in the space available to me to enumerate the various bodies that writers have recorded as having lodged in the œsophagus. The foreign substances already referred to as being commonly impacted in the pharynx, are equally likely to lodge in the œsophagus.

The commonest that I have come across have been coins, morsels of food or bone, fruit-stones, pins, needles, and tooth or obturator plates. Among lunatics, such articles as knives, forks, spoons, nails, and stones are not infrequently met with.

Among children, too, toys, and such articles as fish-hooks, beads, rings, keys, and coins have been swallowed, lodging in the gullet. Among soldiers abroad, such substances as live frogs, fish, eels, and leeches have been recorded as lodging in the œsophagus, the accident having usually occurred from swallowing brackish water out of adjacent pools.

Symptoms.—Foreign bodies lodging in the œsophagus is always a serious matter. Occasionally vomiting takes place, and the expulsion of the offending body results.

Impaction of large bodies usually occurs at the upper end, middle third where the left bronchus crosses, or the lower end of the œsophagus.

Smaller bodies, especially pins or needles, may stick anywhere in the œsophageal walls.

There is usually a history of a foreign body having been swallowed, followed by discomfort, bad cough, with a discharge of mucus, especially if high up, and sometimes the discharge of blood.

Large hard bodies give rise to the most urgent symptoms, such as severe dysphagia and dyspnœa ; they may even cause local bulging if lodged in the cervical portion of the gullet, and be felt and recognised externally. I have detected a tooth-plate in this manner. Small hard bodies usually cause intense discomfort and irritation, together with a certain amount of dysphagia.

Bodies, such as coins, have been known to remain impacted in the œsophagus for very long periods without giving rise to any serious or disagreeable symptoms.

The degree of dysphagia and dyspnœa varies very much ; there may be considerable pain, giving rise to constant retching.

· Should the foreign body be allowed to remain, and the patient survive, inflammation may be set up and ulceration follow, causing perforation of the œsophagus.

The ulceration may open into the neighbouring trachea, bronchus, or pericardium, or may cause acute mediastinal or cervical abscess.

Fatal hæmorrhage is by no means uncommon. Rivington mentions a case in which the left common carotid had to be ligatured, it having been wounded by a fish-bone, and he gives an abstract of forty-four cases of wounds of blood-vessels by foreign bodies introduced through the mouth.

Diagnosis.—As a rule, the history makes the case quite clear, but in children and insane people a diagnosis may be difficult.

Sudden onset of dysphagia suggests exploration of the œsophagus, and the body is usually detected by physical exploration, a bougie, auscultation of the œsophagus or the Röntgen rays. The latter

are especially useful in the case of coins, metal plates, and such-like bodies. In both the cases under me that I append, the bodies, one a halfpenny and the other a screw, were easily detected by radiography.

Prognosis.—The longer a foreign body remains in the gullet the graver the prognosis. This is especially the case if the body be of large size, angular, or sharp.

Death may occur from œdema of the larynx, abscesses, ulceration and stricture of the œsophagus, perforation or rupture of the gullet, penetration of the pericardium, pleural cavity, larynx, trachea, or bronchi.

Treatment.—In all cases an attempt should at once be made to remove the foreign body through the mouth. If the body be lodged in the upper part of the œsophagus, the use of a suitable pair of forceps or the grapnel probang will often be successful. For coins, nothing is better than the ordinary coin-catcher. As a rule it is better to administer a general anæsthetic, and great gentleness must be exercised in the manipulations of the instruments.

Emetics and inversion are both dangerous, and their use, especially the former, to be condemned owing to the liability of rupturing or lacerating the œsophagus.

External manipulation has been successfully employed; for instance, in a case of a patient with impending asphyxia, due to the impaction of several large pieces of potato in the œsophagus, Dupuytren succeeded, by pinching the gullet with the fingers through the neck, in crushing the potato and thereby enabled it to be swallowed.

For small bodies, such as fish-bones, pins, &c., the use of the expanding probang is recommended. The very greatest care, however, must be exercised, for fatal hæmorrhage has been known to ensue.

If the foreign body be of the nature of a tooth-plate, coin, or other large, sharp, angular body. and careful and justifiable attempts have been made to remove it with suitable instruments, and without success, the sooner an external operation is performed the better. In deciding on this course due consideration must be given by the surgeon to the size and character of the body, the urgency of the symptoms, as indicated by dyspnœa and dysphagia, and the length of time the body has been swallowed. The rule laid down by

Fisher, that in every case in which a foreign body cannot be removed within twenty-four hours after it has been impacted in the œsophagus, external operations should be performed to obviate the danger of fatal internal complication, is not far from the truth if due regard be paid to the nature of the impacted body.

In performing the operation of œsophagotomy, when the œsophagus has been exposed, if the foreign body cannot be felt projecting, the mouth must be gagged open and a bougie passed when the tube has been opened, the opening should be dilated with dressing forceps or a probe-pointed bistoury., Even with a free opening, the body being a tooth-plate with projecting clips, it may be impossible to dislodge. In such cases it must be cut in two, care being taken to keep hold of each portion with forceps.

If, after exposing the œsophagus, the body cannot be felt, the tube should be sounded with metallic probes, and the lower cervical and upper thoracic portions examined carefully. After removal of the foreign body the wound in the œsophagus should be closed with Lembert's sutures (the mucous membrane not being included), only if the wound be clean cut and the foreign body quickly removed. Where the wound is bruised or jagged, or the walls of the œsophagus are inflamed, no sutures should be employed, but the whole wound drained from the bottom. The external wound in almost all cases is more safely left open.

At first feeding should be by nutrient enemata; if all goes well liquids may be given by the mouth after two days. If the nutrient enemata cannot be retained, or the patient is very weak, a soft tube must be passed through the mouth and œsophagus and either retained or passed frequently.

The following two cases well illustrate the use of the Röntgen rays in the detection of foreign bodies in the gullet and stomach.

Case i.—A little boy, aged two years and eleven months, was sent up to me by Dr. Wallace, of Beckenham, with the history of having swallowed a halfpenny some eleven days previously. The boy's mother had carefully examined the motions passed, but with no result. There was no complaint of any pain in the neck; there was no dysphagia or dyspnœa, nor had there been any of these symptoms at any time. Occasional vomit-

ing, however, was noted. The boy, when I examined him, complained of pain in the right iliac fossa, and on examination of the region cried. Nothing, however, could be detected. The mother stated that the child had complained of pain in this region for three days. The bowels were open regularly every day.

Examination of the pharynx and larynx laryngoscopically, and with the finger was negative. I sent the child up to Mr. Montague to have a skiagram taken of the upper air passages, with the result that a coin was very clearly seen wedged in the œsophagus at the level of the top of the

CASE 2.—A boy, aged three, was sent up to me by Dr. Coates, of Streatham, with the history of having swallowed an inch and a half screw two days before. There were no symptoms. Examination of the pharynx and upper part of the œsophagus and larynx revealed nothing. The child was skiagraphed, and the skiagram showed a screw lying low in the stomach and with the point towards the pyloric end.

Instructions were given as to diet and examination of the motions, and two days later the screw was passed per vias naturales, and with but little pain. The screw was one inch in length.

Skiagram of Mr. de Santi's Case of Impacted Coin in Œsophagus.

sternum. Under chloroform I was able, with the aid of a coin-catcher, to extract the coin, which proved to be a halfpenny. It was somewhat tightly wedged in the gullet. There were no after-complications.

The interest in this case lay in—

(1) The pain complained of in the right iliac fossa, and suggestive of lodgment of the coin in the neighbourhood of the ilio-cæcal valve.

(2) The length of time the coin had been impacted in the œsophagus without causing more serious symptoms, such as ulceration.

(3) The absence throughout of any dysphagia or dyspnœa.

HEART DISEASE IN CHILDHOOD AND YOUTH.

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IN TWO PARTS.—PART I.

HEART diseases in children did not always claim the amount of attention which they do at the present time. Dr. Henoch, in the opening chapter on 'Diseases of the Circulatory Organs,' says

"Pathological changes in the heart are not much rarer in children than in adults. The age causes neither anatomical nor clinical differences of any essential importance." On the other hand, in Dr. Tanner's work, the author remarks:—" It may further be stated that, admitting the comparative rarity of heart disease in childhood, we must, nevertheless, allow that it is far more common than was formerly supposed, and may, perhaps, be still more so if carefully sought for." To the late Dr. Sturges we owe much of our knowledge of the special characteristics of cardiac disease in children, the Lumleian Lectures of 1894 being among the most valuable contributions on the subject. A little thought will show that heart disease must necessarily in some respects affect children differently to adults, and further consideration will point out where the variation exists. In childhood and youth we have growth and great activity of the organs of nutrition, in later life degenerative changes have to be considered; again, in the former, questions of education and games are pressing, while in the latter domestic and business responsibilities are elements in the case that must have their due weight in prognosis and treatment. Dr. Sturges, in the lectures already referred to, shows that the incidence of rheumatism varies even in children at different periods. He gives an analysis of 100 cases where post-mortem examinations had been made, the proportion of rheumatic and non-rheumatic being:—

　　　Rheumatic—boys, 22 ; girls, 32　　... 54
　　　Non-rheumatic—boys, 22 ; girls, 24 ... 46
　　Ages of the rheumatics :
　　　Between two and four years　...　.　2
　　　Between four and six years　...　... 4
　　　At six years old...　　...　...　... 6
　　　Between six and twelve years ...　... 42

In children arthritic symptoms do not so generally occur concurrently with the cardiac. In a first attack of rheumatic fever there may be no morbid cardiac sounds until late in the illness, or, indeed, until after apparent recovery. Later on the patient may become breathless after some extra exertion, when, for the first time, a valvular lesion is discovered. Cases illustrating this are given.

Causes of Heart Disease in Children.— These are rheumatism, chorea, nephritis (gene-

rally from scarlet fever), dilation from mural degeneration or weakening during acute fevers, and congenital disease, either due to intra-uterine endocarditis or imperfect development. Congenital disease is recognised by the existence of more or less pronounced cyanosis, dating from birth, and clubbing of the distal phalanges of the fingers and toes. The exact condition of the heart underlying these symptoms cannot with any certainty be made out; a more or less extensive communication between the auricles or ventricles, narrowing or atresia of the orifice of the pulmonary artery, and transposition of the large vessels, are among the causes of congenital heart disease. Although, generally speaking, there is no difficulty in recognising such a case, it may happen that the symptoms directly attributable to heart disease are so slight and unobtrusive that treatment is applied to the relief of complications without reference to the primary disease. (See Case 1.)

In children the action of the heart is most easily affected by the emotions; it is, therefore, a good rule to postpone the physical part of the examination until the child has got over the excitement of " seeing the doctor," and its confidence has been gained.

Dilatation of the heart during an acute febrile attack may be sudden and extensive, and should always be looked out for. In no period of life is hypertrophy of the heart so great as in childhood. This is well seen in cases of aortic regurgitation, the bulging of the left chest in long-standing cases being remarkable.

In children the heart complication most to be feared in the course of a rheumatic attack is pericarditis. There may not be much effusion, although the cardiac dulness is increased, the enlargement being often due to dilatation of the heart. It is often extremely difficult in acute cases to say whether the increased dulness is due to dilatation from carditis or to effusion into the pericardial sac; but when the apex beat is outside the normal position and the dulness is up to, or even outside, the nipple line, dilatation is the most probable explanation. The object of the foregoing remarks is not to deny that effusion may occur, but rather that it is not the only cause of increased cardiac dulness.

Adherent Pericardium.—When the imme-

diate danger of cardiac failure from acute pericarditis is past and the fluid—if any—absorbed, pericardial adhesion is the rock ahead. The adhesion may be between the two surfaces of the pericardium only, or also between the sac and the chest wall, the latter being the more serious. Besides the crippling effects of these adhesions upon the heart, changes of an inflammatory and degenerative nature frequently occur in the cardiac muscle which favour dilatation; consequently we must note that hypertrophy and dilatation are among the after-effects of pericarditis.

Chorea.—It is pretty generally agreed that this disease is essentially rheumatic. As in rheumatic fever the heart may or may not escape damage, so in chorea. Further, the physical signs of endocardial lesion may be temporary or permanent. When the damage to the valve is not severe and subsequent compensation takes place, the patient may be in blissful ignorance of his condition until a medical examination for life insurance or some similar object reveals his condition. *Case 1:* Quite recently I was consulted by a gentleman whose application for a Government appointment had been declined " for heart disease." On examination a loud systolic bruit was heard in the mitral area and round to the left scapular angle. The only point in the history was that he had had chorea when a child.

In children the joints and the heart are not always concurrently affected. A rheumatic pericarditis may precede the arthritic symptoms, and an endocardial lesion may develop or become recognizable many weeks after convalescence from rheumatic fever. Again, the rheumatic affection may be so slight as to attract little or no attention, and yet the effect upon the heart may be very serious. The following case is an illustration. A boy came under my care in May, 1896. Two months previously he had had a slight feverish attack, with small nodules on his arms and legs, but no joint affection. The medical man who saw the patient diagnosed the case as rheumatic, and kept the child in bed for three weeks, although he did not appear to the parents to be really ill. On examination the heart was found to be considerably enlarged, the apex being in the fifth space in the line of the nipple. The heart's action was visible over a large area, a systolic bruit was heard at the apex and over the

whole left side posteriorly, and the second aortic sound was prolonged, and roughened signs indicating mitral regurgitation and probable aortic incompetency were present.

Prognosis.—Difficult though it often is to forecast the issue of a case of heart disease, the anxious parent expects to be told when and how far the child may recover, and, if recovery is impossible, the probable duration of life.

A thorough investigation must be made into the general condition of the case, as well as into that of the heart. The evidence thus obtained, together with the personal and family history, provides the data for forming our prognosis.

The subject has two aspects, the immediate and the remote; in other words, the questions are:—What are the probabilities of the recovery of the child from an acute attack of cardiac inflammation, and, the patient having recovered from the acute illness, what is the probable duration of life? In these, as in other questions, each case must be judged on its own merits.

In acute cardiac inflammation the signs of danger, anxious expression, quick breathing, cyanosis, and persistent high temperature, are seen pretty clearly before making any physical examination. If, in addition to these, there is physical evidence of serious heart and lung implication, the outlook is gloomy indeed. If, on the other hand, there are no present elements of danger, the prognosis, though necessarily better, must be always guarded, as complications may arise at any time.

In chronic cases the character of the lesions should be made out, but it must always be borne in mind that the loudness of the bruit does not of itself indicate the extent of mischief in the heart. The condition of the heart muscle is a more important question in prognosis than even the presence of a bruit at all. It is important to remember that contraction and adhesion of the valves as a sequel to endocarditis may occur some time after the acute illness has passed. Bearing the above points in mind, the following table may be useful:—

Less Serious.	*More Serious.*
1. There has been but one attack of rheumatic fever.	1. There have been several attacks of rheumatic fever.

Less Serious.	*More Serious.*
2. The general health has been good since the fever.	2. The general health has been indifferent, and the attacks have recurred at short intervals.
3. The general nutrition is good.	3. The general nutrition is bad.
4. The family history is good.	4. The family history is bad.
5. There is good compensation, the apex beat is strong, the radials fill well, and do not too readily collapse.	5. The impulse is weak, the apex beat diffused and feeble, the radials fill imperfectly, and some of the cardiac contractions do not reach the wrist.
6. The heart failure, if present, is recent; the liver is not much enlarged; there is no œdema of the lungs, no swelling of the ankles, no albuminuria.	6. There have been previous attacks of heart failure, the liver is below the umbilicus, the lungs inflate imperfectly and are dull on percussion.
7. The colour is good.	7. There is cyanosis.
8. The digestion is good.	8. Food scarcely retained.

An approximate estimate of the condition of the myocardium may be arrived at by noting the following. It is good when the apex beat is well defined and is synchronous with the pulse, or at least numerically corresponds. If the second pulmonic sound, which had been previously accentuated, becomes weak, it is an indication of failure of the right heart. The history is often of distinct value in prognosis: for instance, if some few years have elapsed since the rheumatic fever, and the heart has hitherto borne the strain well, it is presumable that, in the absence of further attacks of rheumatism or other acute illnesses, the case will do very well.

Hygienic Management.—This is a matter of the greatest importance, and as its true value is not always appreciated by patients, it is the more incumbent upon the medical adviser to be definite in his directions. It is obvious that the circumstances of the patient will modify our directions, but parents will, as a rule, make any sacrifice for their child.

It may be taken as an axiom of special appli-

cability in heart cases that the better the general health is maintained, the more will the damaged organ be able to combat with its difficulties. In the remarks on prognosis this point is insisted upon. No detail is too trivial if its observance will in any way help the patient.

The points to be considered are (1) Clothing, (2) Place of residence, (3) Diet, (4) Education, (5) Exercise, sports, and games.

1. *Clothing.*—Rheumatism has a great tendency to recur, and each successive attack generally further damages the heart. The skin must be protected by woollen underclothing all the year through, though the weight may be varied with the seasons. Although freedom from recurrence of rheumatism for some years renders further attacks less probable, complete immunity can never be expected.

2. *Locality.*—In these days of suburban railways a locality fulfilling the requirements of the invalid of the family can be obtained in many cases without interference with his father's business. If a choice can be made a gravel subsoil should be selected; the house must not be surrounded with trees; it should stand at a fair elevation, with a gradual ascent at least on one side. A southern or western aspect is to be preferred. Valleys are objectionable, not only because the air is either damp and stagnant, or draughty, but also that it is inadvisable for the patient to have to make an ascent every time exercise is taken. Even in cases where exercise on rising ground is not only permissible but useful, it must be under control.

3. *Diet.*—Indigestion in its various forms is very common in heart disease. On the other hand, pure indigestion is responsible for many symptoms which strongly simulate, or indeed are identical with, those observed in actual cardiac affections. The latter class may be explained by the nervous connection that exists between the stomach and the heart, whereby gastric irritation may be the sole cause of cardiac irregularity. The frequency of dyspeptic symptoms in the course of heart disease is to be accounted for on other grounds. When the balance of the circulation is disturbed by valvular disease, or by any condition whereby the heart's action is interfered with, backward pressure is sooner or later exerted on the right side of the heart, which necessarily

causes congestion in the other viscera. It is obvious that the functions of the stomach and the liver would be interfered with by this chronic engorgement, and digestive disability remain until treatment relieved the congestion and enabled the heart to encompass its difficulties. In those happy cases where compensation is practically complete, the patient may take ordinary food in moderation. Children are apt to take food or sweets at odd times, and this pernicious habit is sometimes encouraged by indiscreet parents. Food should be taken *at regular intervals*, and a rest afterwards for from ten to thirty minutes must be insisted upon. The character of the food must depend upon the state of the patient at the time. It may even be necessary to depend entirely upon pre-digested foods. No hard-and-fast rules can be drawn, but general directions may be given. Thus, anything which is liable to cause flatulence, such as farinaceous foods, the stalky parts of vegetables, salad, &c., had, as a rule, be better avoided, as also sweets and " made " dishes.

As regards stimulants, there is still a deep-rooted prejudice in favour of the routine prescription of them in all cases of heart disease, even in children. As a broad rule, alcohol is not required, and when it is ordered the amount to be given each time should be specified, and the circumstances under which it is to be taken carefully laid down. In by far the majority of cases it is only in emergencies that alcoholic stimulant is needed. A heart may be worn out prematurely by being " kept up " with spirit. For a pick-me-up, milk, with the addition of a little saccharated lime water, is generally well borne by children ; at other times the white of an egg, with water and lemon juice, will answer when milk is not tolerated. Where there is a tendency to faintness beef tea, to which a small quantity of brandy has been added, is very efficacious. Care must, however, be taken to discriminate between real faintness and the sense of sinking felt at the epigastrium which is caused by indigestion.

4. *Education.* — Parents and well-meaning friends, when they learn that a child has heart disease of a permanent character, sometimes question the desirability of going on with lessons, saying : " Why bother the child with lessons, when his probable span of life is so short ?" I would urge most strongly that, with due con-

sideration for the child's strength, education should not be interrupted. The child must be carefully watched to see that the health is not injured thereby. If irritability of temper or sleeplessness follow the lessons, they must be considerably curtailed.

It must be remembered that the improvement which follows treatment in heart cases is at times marvellous, and with children the most gloomy forebodings are not infrequently falsified. Again, occupation of the mind keeps the patient from dwelling too much on his illness. To see other children romping about is less trying when the invalid has something to look forward to every day which interests him. Above all, if the child has a hobby it should be encouraged, so that in times of weariness life may be more tolerable. As to the children of the poor they must, when unfit to attend school, be protected from the importunities of the School Board Inspector by a medical certificate.

5. *Exercise, Sports, and Games.*—It is a serious thing to debar a child from outdoor games, unless there is a real necessity for so doing. This is sometimes done in order to be on the right side, when, although no definite structural disease exists, the heart is judged to be weak. Entire abstention from sports should not be ordered in such cases until two or more examinations have been made. On the other hand, there are cases where, to allow anything beyond moderate exertion, is but to court disaster. Too much importance must not be attached to a slight irregular action of the heart only, as it may be due to indigestion from improper or excessive food.

When a child is convalescent from an illness where the heart was involved, gentle exercise should be allowed ; but the character and amount must be carefully prescribed, and the effect upon the heart watched. The absence of a murmur during or soon after a rheumatic attack is no guarantee that the heart has escaped all risks of organic disease, since valvular disease may not be in evidence until some weeks have elapsed. For instance, the effects of a pericardial adhesion are not immediately apparent ; and, again, mitral stenosis is for the most part a consequence of endocarditis, with subsequent adhesion and contraction of the inflamed membrane.

The heart should be examined at intervals for

a year at least after the rheumatic fever has subsided, in order to determine what exercise is advisable and salutary.

It is obviously impossible to formulate rules of more than general application; but there are some forms of exercise which are bad for all cases of organic heart disease, such as swimming, football, racing, paperchases, &c.—games which demand sustained competitive or sudden exertion. Bicycling entails but little exertion, provided the gearing is moderate, the pace easy, the road level, and the distance well within the capacity of the rider. Cycling, however, had better be avoided in aortic regurgitant cases. Walking is a good exercise, but children are apt to exhaust all their strength on the outward journey, and not to give in until they are obliged. The "Whiteley Exerciser" is useful for indoors. The advantage of this and similar exercisers, where the resistance is due to the recoil of indiarubber, over those where a weight has to be pulled up over a pulley, is that, in the latter, the strain is at its maximum at the commencement of the pull, whereas in the former case the resistance is at first slight, and gradually increases with the contraction of the muscles. As the muscular effort required for using this exerciser increases with the tension of the rubber the strain can be regulated to a nicety, every few inches the patient advances from where the apparatus is fixed making a greater demand upon the heart. The number of exercises and their frequency have to be prescribed and modified from time to time as the case goes on.

Exercise requiring fixation of the chest, as in rowing, is bad in heart cases. Bicycling is not open to this disadvantage, in that it allows free movement of the chest, and the patient is, moreover, relieved of the fatigue of walking, and he inhales fresh air freely. It is a good plan for the medical attendant to try the effect of a few "resisted exercises" on the patient before giving directions for the home treatment, noting the position and force of the apex-beat, the character and frequency of the pulse, and, as far as possible, the area of cardiac dulness both before and after. By these means valuable information may be gained as to the behaviour of the heart when called upon for extra exertion. The great point is not to attempt too much at the beginning of treatment. It is at times well to be content with

simple movements of the extended arms over the head; this form of exercise is particularly useful in early convalescence from acute cardiac inflammation.

Exercises should not be taken soon after meals, an hour at least being allowed to elapse. Cardiac patients are liable to flatulent distention of the stomach, and it is better to direct one so affected to wait until the flatus has been expelled before taking his exercise.

An unsigned article in the March (1899) number of 'Blackwood's Magazine,' entitled "Physical Education in Schools," contains much valuable matter, and will well repay a careful study. The following extract is of special interest in the consideration of our subject: "Much evil often results from asking a boy who may be physically weak to do much either in gymnastics or football. Every boy, on entering school, should undergo a thorough medical examination; and special notice should be taken of the condition of his feet, teeth, eyes, chest, heart, and spine, as well as his general muscular development, and of any malformation of his system. On the basis of the medical report the gymnastic instructor, and those in charge of the school games, should classify boys into sets, according to their physical condition; and in special cases, such as very poor muscular development, hollow chest, or weak heart, they should further consult with the school doctor, and, subject to his advice, draw up a special course of training to suit the particular case in question The headmaster, or some responsible substitute, should draw up a list of boys divided into three groups: (1) those physically fit to engage in the complete system of school training, who are keen, active, and interested in their own development; (2) those physically fit, but who by nature are lazy and slovenly, and quite regardless of their own growth and physical improvement; (3) those who from some bodily defect or weakness are undergoing a special training. The purpose served by such a list will be obvious. Careful and accurate measurements of the height, chest, waist, biceps, forearm, and head should be made, and the weight ascertained not less than four times a year, and in the case of weak and ill-developed boys more frequently. . . . . It has already been said that a proper scheme of physical exercise should

be drawn up for each school; but it is equally important to see that this scheme is strictly adhered to, and that all forms of exercise are performed under skilled direction and supervision. In gymnastics the instructor has to weigh and consider three chief points, the physical condition of each set of pupils, the nature of gymnastics best suited to each set, and the time per week allotted to gymnastics."

Two Illustrative Cases.—F. C—, a little girl aged eleven years, came under my care in March, 1895. She had been ordered to keep away from school because the heart was weak, and I was to decide whether this was necessary. The patient complained of feeling weak and easily becoming tired, and of occasional pain in the left side. There was no history of any previous illness beyond a little bronchitis. She was an only child, and indulged in every whim. She had her meals with her parents and was allowed to sit up late.

On examination all the organs were found healthy. I ran the child up some stairs and found the heart fully equal to the strain. Common-sense directions were given as to diet and sleep, the digestive organs attended to, and the child sent back to school. Later accounts showed the advice to have been sound.

B. R—, a boy aged eleven years, was sent to me by Dr. Masters, of Kensington, in April, 1898. There was a history of a little rheumatic gout in the parents, but otherwise the family was healthy. The patient had never been robust, but had not had any serious illness; there was at times gravel in the urine. On medical advice the boy had been prohibited from school and games. Dr. Masters, however, had allowed school, but prohibited games. The question now was whether the latter might be resumed? On enquiry it was found the child had never been blue or exhausted after running, nor shown any signs of distress after exertion. On examination the heart's apex was in the fifth space half an inch inside the nipple line; the action was strong and regular; there was no bruit. On running the child upstairs a soft systolic bruit was heard at the apex, which, however, disappeared in two minutes. I advised that the boy should resume the less · violent games, and that a periodical examination of the chest should be made.

The first case was purely one of indigestion and coddling; the second patient's heart was prone to yield to extraordinary strain. The former was sent back to school with no special restrictions, while the latter was to take exercise in moderation and to be kept under observation. Both cases have done well.

What are the chief signs of cardiac distress for which parents or other custodians of children may be on the look-out?

1. Palpitation.
2. Breathlessness, especially if easily provoked.
3. Cyanosis.
4. Hæmoptysis, indicating pulmonary congestion and increased strain at the right side of the heart—common in mitral stenosis.
5. Pallor, showing failure on the systemic side. This is most prone to occur in aortic cases, leading to faintness or actual syncope. It may be briefly stated that cases of mitral stenosis and of advanced regurgitation bear strain badly, moderate aortic stenosis or regurgitation better.

Faintings, in churches and hot rooms, are not uncommon in the less robust children, and are a cause of anxiety to their parents from the fear that heart disease is the cause. That these attacks may be cardiac in their origin is doubtless true, but a critical examination of the heart quite frequently gives a negative result. Some cases can be explained by the child having hurried to church soon after a heavy or indigestible meal, by intestinal worms, and the petit mal of epilepsy, or by albuminuria. But, after eliminating these and other possible causes, the faintings are in many cases inexplicable, except on the theory of air hunger, due to a cardiac lesion. The chest should, in doubtful cases, be re-examined at intervals.

If at any of the examinations the attacks of faintness are found to be due to functional or organic affection of the heart, appropriate treatment must be resorted to. In all cases, whether traceable to heart disease or not, the child should not be allowed to go into hot or close rooms. It may be advisable to provide the patient with smelling salts.

THE CLINICAL JOURNAL.

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NOTICE.

WITH

DR. F. J. SMITH IN THE WARDS
OF THE LONDON HOSPITAL,

September 25th, 1899.

*A Case of Rheumatism with Cardiac Bruits and
with Purpura (peliosis rheumatica).*

THIS patient, a woman aged 27, has been ill three
months, and in bed fourteen days, with acute
rheumatism. It is her fourth attack, and she has
undoubted cardiac bruits. When you have a case
of morbis cordis diagnosed as such by the bruits,
one of the questions of most importance which
can, and not only can but is certain to arise, is
when shall we allow th s patient to get up? The
answer is best obtained by what one may call the
process of experimentation, that is, letting the
patient sit up or even stand up for a moment or
two, and during the process count the pulse,
having previously counted it while in the re-
cumbent position. As a fair working clinical rule,
we may say this : that if in the erect posture the
frequency of the heart-beat increases more than
about 15 to 20 per minute, it is an indication that
the heart is still too weak to withstand the strain
of prolonged getting up, and the patient had better
remain in bed for a few days longer. In addition
to this, in those cases where the bruit or bruits
have been known to develop under observation so
that we have strong reason to believe that the
endocarditis is recent, then we may get a hint
from the temperature chart. If, for instance, we
find it, as in this case, jumping up to perhaps
100° on occasions, one is apt to think that there
is still a little smouldering endocarditis, and this
is more particularly the case if the bruits seem in
any way to materially alter under observation.

This particular case was admitted for what is
termed peliosis rheumatica, a purpuric condition
well known in connection with rheumatic states,
any treatment for which, except rest, is perhaps
largely useless. But turpentine is asserted by

some to have a beneficial effect in clearing away the hæmorrhages, and preventing others. In this particular case, however, the patient was treated by turpentine for some little time, which has *not* prevented a relapse during her stay in the hospital. While on this subject, we may say that perhaps one of the most important points in deciding on the treatment or on the prognosis to give in a particular case of cardiac disease, is to find out the reason why the patient came to us complaining of any definite symptoms. What I mean by this is that an enormous majority of cardiac bruits are known to have existed for, at any rate, a period of time to be measured by years, and therefore one must naturally assume that the compensation has been pretty good during that time. Hence the importance of trying to find out what it is that has upset the compensation. Inasmuch as this is generally some strain, it is a very useful practice to see what a few days' rest in bed will do for all cardiac patients before using any drug. If the symptoms have come on insidiously, *i.e.* without any appreciable increase in exertion, it makes the prognosis so much the worse, for we have to assume that compensation is being disturbed by intrinsic weakness of cardiac muscle.

[The next case was one of subacute rheumatism, and, though the case itself presented no particular features, Dr. Smith drew attention to the fact, which is perhaps apt to be overlooked, that in certain cases salicylate of sodium, which is now so universally used for rheumatism, will produce delirium. This, when taken in conjunction with a temperature of about 102° is apt to raise suspicions of hyperpyrexia coming on, whereas, as a matter of fact, it should be just the reverse, for hyperpyrexia is associated in its earlier stages with a sense of restlessness, a cessation of the sweating, and a mental clearness—just the opposites of this delirium and sweaty condition.]

Ulcerative Endocarditis.

The next patient is a man aged 26, the subject of acute rheumatism. The diagnosis of ulcerative endocarditis, in addition to rheumatism, has now been made. He was admitted on the 31st August, when he had been ill four days. There was a history of four previous attacks of rheumatism and old endocarditis. His temperature came down on the eighth day of the illness, but the same evening

he had a rigor, and these have continued on alternate days ever since, though they have been rather less frequent during the last few days. The day after he had the rigor he got embolism of the right popliteal artery. This cleared up in a few days, and since then he has been lying in a lethargic condition. His pulse is usually almost imperceptible. On September 19th injections of antistreptococcic serum were commenced, and they have been continued for six days. During the last two days the temperature has not risen above 100·2°. The blood was cultivated, but yielded negative results. He has apparently derived great benefit from the injections, and the temperature is not high. This is, after all, not in contradiction to the negative results from his blood, for antistreptococcic serum should be an antitoxin, and not necessarily a microbicide. His pulse is now 122 per minute. Apropos of this case, I would like to draw your attention to the two varieties of ulcerative endocarditis, viz., the septic and the simple ; either may follow upon acute rheumatism.

Traumatism followed by Empyema.

This patient is a female child aged 10, and the history is somewhat interesting. The child was knocked down and run over three weeks ago ; the wheel passed over the chest, and the horse kicked her in the mouth. She has been in bed ever since, and her appetite has been bad. The child seems to have been generally ill, but the mother could give no definite history as to details. At first the local doctor could not examine her, and about a week later, when the tenderness had subsided, he examined the chest, and found it dull from the apex to the base on the left side. There were pains in the left side of the abdomen, and pain under the chin, the latter was accounted for by the fact that she had some teeth knocked out. There has been no vomiting, and the bowels have been freely opened, so that we have not suspected acute peritonitis, but a slight cough was noticeable. The mother said the child had always been weak in the right arm and leg.

As there was no external injury on the chest, it seems at first sight a little difficult to call the empyema a septic one ; but, inasmuch as that is the usual fate of nine out of ten empyemata, viz., that we cannot account for their origins, I suppose all one can say is that the traumatism acted as such a

depressant to the tissues, that the ordinary causes of inflammation within the thorax were able to act with greater vigour, and we need not appeal to the septic wound of the mouth as a cause, though the question was raised in talking over the case. As soon after the accident as this child's chest could be examined owing to the tenderness having in some measure disappeared, it was found that the chest was dull, and it was thought at the time that effusion of blood might possibly be the cause of the dulness ; the subsequent history has proved this to be incorrect, though, at the same time, one might perhaps have had some *a priori* ground for believing it to be blood. The pain was very intense, as though the child were rather seriously damaged, and blood had poured into the pleural cavity, but this is an accident which must be very rare, though a rapid effusion, other than blood, into the pleura is by no means infrequent.

As regards the differential diagnosis of simple fluid from blood, or even from pus in many cases, I do not know that there is any means of doing this except with a needle and a hypodermic syringe. On admission, pus was found by this means, and when once pus is found in the thorax I consider that the only legitimate method of dealing with it is to empty the chest as freely as possible, and, for choice, by distinct operative measures, though I have known upon two occasions (and those two at the extremes of life, one in a child aged about a year, and the other in a man of sixty-six), a single aspiration of pus from the chest to be followed by complete recovery. This shows us that under conditions where skilled surgical assistance is not available aspiration may be safely and even hopefully resorted to.

The question was raised whether the kick in the mouth had anything to do with the empyema. It is perfectly true that the mouth wound had suppurated, but I think, if this were the actual *causa causans* of a purulent as opposed to a simple effusion, that then we must have had a case of general septicæmia, and not one of a mere local collection of pus. As a matter of experience, possibly not one per cent. of empyemata have even this apparent cause for their suppurative character. It is a question whether one must not exclude from this list those which are associated with tubercle, because there I think we do get pretty definite evidence of septic micro-organisms

getting into small tubercular foci, and thus reaching the pleura. Nothing perhaps strikes the dabbler in science with more idea of its obscurity than internal suppurations in general, but the clue to the position lies in the fact that microbes require pathways of less than microscopical proportions to enable them to get into a given district.

As regards the prognosis of empyemata, the vast majority of them get well when they are freely opened and drained, so that the condition is certainly not to be looked upon as a hopeless one at all. If the pus stinks, although the prognosis must undoubtedly be looked upon as made more serious thereby, certainly it is still not to be considered hopeless, as I have known at least three cases of stinking empyema out of five get well. In operations on empyemata the question of administering the anæsthetic is apt to be a difficult one ; one lung being *hors de combat*, or practically so, respiration can easily become embarrassed. The caution is to keep the patient as far as possible on the affected side while administering the anæsthetic, and not to give more of the anæsthetic than is really necessary. In operations on purulent conditions of the *lung* I have known, at any rate one, and I think more than one death take place from neglect of the precaution to keep the patient on the affected side, the reason for it being that the pus during operation drains into the only sound lung the patient possesses, and thus brings about very serious trouble.

The next case is one of empyema, in which there is a hitch in the proceedings, and the question arises, where does the hitch come in ? Her temperature will not become normal, although the discharge seems to be sufficiently free, and the lung does not expand. It certainly makes one suspicious that tubercle may be at the bottom of the trouble, although we have no definite proof. The only method of clearing up the matter that I know of is to conduct inoculation experiments, and for that purpose we will send some of the fluid to the bacteriological research laboratory.

The next case is also one of empyema in a young man aged 20, who is now practically convalescent. He had an empyema on the left side, from which two pints of fluid were extracted. A fortnight later the temperature went up again,

and a pocket of pus was discovered which was not draining properly. This was opened (by pushing in the drainage-tube rather further than usual), and ten ounces of pus escaped, after which the temperature came down at once, and the patient has done well; here the cause of the hitch was soon made manifest. When he came in, dulness extended to the clavicle, and the heart was pushed over to the right side.

Prognosis in Typhoid.

This girl aged 17, is now in the fifth week of enteric fever, her temperature has never at any time called for any anxiety, having only upon one occasion reached 104°, and having been for the last fortnight very rarely above 102°, usually a good deal below that. But for all this slight temperature her condition has been one causing us very grave anxiety, owing to the effect which the toxin has seemed to be having upon her nervous system, causing her to be very restless and stupid, and later even delirious. Perhaps the very fact of there being a low temperature has added to the gravity of one's opinion, for the condition of her nervous system suggests that the child has not got sufficient energy to react well, *i. e.* to form plenty of antitoxin. And, even though her temperature is now only 99°, one will still continue to be very anxious about her until the condition of her abdomen has improved, for it is now showing some signs of distension, which, even alone, is a bad sign. [An enema of half an ounce of turpentine with a small quantity of water was found most useful in relieving this distension.]

With regard to milk in typhoid, milk I consider one of the most dangerous foods in typhoid when given without discrimination. What I mean by discrimination is this: one stool at least every other day should be washed under a tap of water, so that we may convince ourselves as to whether the milk is all being digested or not. The presence in the stool of small fragments of milk curd is a distinct indication that the milk is doing harm, or at least no good. As regards what we can substitute for simple milk, weak beef-tea, or even milk taken in the shape of a cup of tea or coffee, is, I think, preferable to the undiluted article; and as soon as the patient is sufficiently interested in life to ask for it, I have no hesitation in letting her have a iece of stale bread with the yolk of an egg, or

even some finely-minced fish or meat that has been well pounded in a mortar. This is only if they actually feel hungry and ask for more food. My reasoning is as follows: Although we know the intestine is severely diseased, it is utterly impossible to either get or to keep it absolutely empty; it is also utterly impossible, and probably would be fatal if we could, to stop peristalsis. Therefore I maintain that, as there must be a small amount of fæcal matter in the intestine, and peristalsis must continue so long as this material is soft, we shall be doing our patients no harm by allowing them some of that amount of soft food which they ask for. Apropos of this reasoning, I have myself seen perforation of the gall-bladder from typhoid, and I have also seen perforation of the appendix from the same disease. In neither of these situations do I believe that any peristalsis worthy of the name goes on, nor does fæcal matter of an ordinary character accumulate. Therefore, if perforation can take place in these quiescent places, it will probably do so in the intestine also if the disease be sufficiently severe, totally irrespective of a small amount of softened fæces or of natural peristalsis.

The next patient is a man aged 30, the subject of a very severe attack of typhoid fever, resembling the case of the girl previously mentioned, in that there has not been a high temperature and that there is associated with it great mental disturbance. It is apparently likely to end in death ; at any rate, in a mental condition which will necessitate careful watching, if not prolonged (? permanent) detention in an asylum.

The Value of the Knee-jerk.

What is the value of the knee-jerk? Frequently, in cases of doubtful organic or functional causation, the knee-jerk may give us a strong clue. Thus in many functional cases it is distinctly exaggerated, but this exaggerated knee jerk is not seen with any of the more important signs pointing to organic mischief. *Per contra*, in a functional case the knee-jerks are, I believe, absolutely never absent, so that presence or absence of the knee-jerks certainly does give us some indication ; that is to say, if the knee-jerks are absent in a case of doubtful diagnosis, I think we may be sure we are dealing with some organic complaint. Of the causes which are not at once apparent for the loss

of knee-jerk, peripheral neuritis is perhaps the commonest, and is therefore to be thought of, though exaggeration of knee-jerk in this disease is not infrequent in early or slight cases.

Acute Congestion of the Kidney.

The next case is that of a female aged 19, the subject of alleged acute nephritis. Inasmuch as a careful microscopical search revealed no casts, one could not help feeling *primâ facie* that the diagnosis would prove to be rather stronger than the circumstances warrant, although the œdema of the face and legs and the appearance of some blood in the urine tended that way. I suggest that we have here to deal with renal congestion rather than with what is known as inflammation of the kidney, and this is further corroborated by the fact that after forty-eight hours in bed the urine contains barely a trace of albumen. The œdema has practically disappeared from the face, but not yet from the legs. She works long hours—8.30 a.m. to 10 p.m.,—and, as she has bad teeth, one may assume she is poorly nourished. As regards treatment, I think keeping her in bed a little longer, and giving plenty of water, with a little saline medicine (if any), is all that is required in the case.

[A week later she was well enough to be discharged from hospital.]

Arsenic in Chorea.

Arsenic is a time-honoured remedy in chorea. For those who wish to push it, arsenic can be administered hypodermically in doses which are beyond the reach of the stomach to deal with. By that I mean doses equivalent to a drachm or one and a half drachms of Fowler's solution in the twenty-four hours. Some years ago I treated a series of cases of chorea with hypodermic injections of large doses of arsenic, with the view of determining whether arsenic had any specific influence over chorea, and the result of the cases thus treated was to convince me most thoroughly that it had no more effect on the chorea than good food and rest in bed had.

Prognosis of Hæmatemesis.

It is extraordinary how very few cases of the most profuse hæmatemesis in youngish people end fatally. One may see a wash-hand basin filled with the vomited blood from a patient who is blanched in the most extraordinary manner, and yet with a few days rest in bed and careful feeding, probably rectal for awhile, they almost invariably do well. I can only recall one fatal case of this sort out of perhaps two hundred which have come under my notice. With regard to the diagnosis of the ulcer, I have no hesitation in saying that there are no distinctive features before hæmatemesis comes on by which one can positively assert that ulcer is present ; or, as is perhaps equally, if not more, important, there is no absence of symptoms by which one can assert that an ulcer is absent. The only conclusion one can draw from this is to treat with some care all cases of dyspepsia in young women. I recently had as a patient a doctor's wife, whom I saw a year ago, with indigestion. I then believed there was nothing very serious. I ordered her to take Blaud's iron pills, and told her to eat rather more freely and go about her ordinary work. This she did, and got quite well so far as we could judge. He brought her to me two months ago, complaining of precisely the same symptoms. They were going away to Germany on the Wednesday, and on the Sunday she was dead, the cause being perforative peritonitis. I examined her very carefully, and could make out nothing which would lead me to suspect an ulcer ; much less, therefore, to anticipate such a dreadful catastrophe as perforation.

The Treatment of Appendicitis.

Assuming that the diagnosis of appendicitis is more or less probable, the treatment must be either operative or non-operative.

As regards non-operative, I think there are only three points in it, namely, careful attention to diet, salicylate of soda in ten-grain doses three times a day, and an ice-bag on the abdomen ; the latter I have always found gives great relief.

As regards operative interference, when should we operate? The answer to this question, I think, depends on whether there is pus present or not. If we can be certain of pus, immediate operation is imperative. But the difficulty is to be certain of pus. If a fluctuating swelling with œdematous skin and redness is present in the right iliac fossa, no doubt is possible. If the temperature seems to be jumpy, and if the patient sweats very much at night, if he has a flush on the cheek or a septic appearance in the face, then I think that pus is

almost certainly present, and operation should only be delayed so long as and until a surgeon can be obtained. In the absence of these signs I think we may certainly wait for operation ; and, in fact, it may not be necessary at all. The sum and substance of the situation, therefore, is that if there is not pus we may wait, but if pus is certainly present, we must operate; and if we are strongly suspicious that it is present, I think it is our duty to urge operation.

Exophthalmic Goitre.

This man, aged 40, is the subject of exophthalmic goitre, in which I am trying the effect of injections of calcium chloride,—3 minims of a saturated solution injected every day into the gland,—in the hope of causing the gland to contract. I believe the disease is due to some essential disturbance in the secretion of the thyroid, not to either excess or defect, but to an alteration in the character of the secretion. My view is that the sooner the thyroid can be put out of action the better. At present the patient is improving under the injections.

Has Clubbing of the Fingers any Diagnostic Value ?

The only thing one can say about it now is that it distinctly indicates an impediment of the proper function of some portion of the lung, which condition has probably existed for some weeks, more probably months, and maybe even years. But in the case before us the man asserts that clubbing has only existed for eleven weeks, that it began distinctly when he had been ill about a month. He has a chronic inflammatory condition of the lower lobe of his right lung—fibroid phthisis ; this is the commonest cause of clubbing, but it may also at times be seen to perfection in congenital heart disease.

The next case was one of hemiplegia, which reminded Dr. Smith of a case he recently had, which, as soon as the patient recovered from the insensibility, proved to be a case of general paralysis of the insane. This also was a case which made one a little cautious in pronouncing an opinion upon a given hemiplegia until after the lapse of some few days, remembering that the fits of general paralysis of the insane are not infrequently hemiplegic in type.

Lead Colic.

The next case was that of lead colic, in which Dr. Smith ordered belladonna to be pushed until the physiological effects of that drug had been obtained, inasmuch as he had seen more relief come from that method of treating lead colic than any other.

Anæsthetisation of the Spinal Cord by Cocaine Injections.—Bier (quoted in 'Münchener Medicinische Wochenschrift,' No. 21, 1899) has conducted a remarkable research, having for its object the production of anæsthesia in large sections of the body by means of cocainising sections of the spinal cord. After having employed Quincke lumbar puncture, a very small quantity of cocaine was injected into the subdural space—from one twelfth to one sixth of a grain. Following this injection, operations such as resection of the ankle and knee joints, sequestrotomy of the tibia, resection of the tuber ischii, and resection in complicated fractures of the femur could be employed without the patient feeling the faintest sensation of pain. For one or two days after these injections patients complain of cephalalgia, vomiting, and general misery.

With a scientific ardour truly Teutonic, Bier practised these injections upon himself and upon one of his colleagues, Hildebrand by name. In five to eight minutes after the injection the legs were entirely anæsthetic; under one twelfth of a grain of cocaine this anæsthesia lasted forty-five minutes; it then gradually passed away. The after-affects were extremely severe in both cases, Bier being kept to his bed for several days.— *Therapeutic Gazette.*

LIGATION of the internal jugular vein of one side is for the most part not followed by serious consequences. Kummer, however ('Revue de Chirurgie,' April; 'Centralblatt für Chirurgie,' August 12th), relates a case in which death in coma took place in five hours after an operation in which such ligation was resorted to because the vessel was wounded. He refers also to a case occurring in von Bruns' clinic, but in that instance there was hyperplasia of the opposite jugular and death was slower in occurring.—*N.Y. Med. Jour.*

THE

DIAGNOSIS AND TREATMENT OF SOME DISEASES OF THE SKIN.

A Clinical Demonstration at the West London Hospital

By Dr. PHINEAS ABRAHAM,

Surgeon to the Hospital for Diseases of the Skin, Black-friars, and Dermatologist to the West London Hospital.

GENTLEMEN.—1. This little boy was an in-patient of this hospital for some time, and has since been an out-patient for seven weeks. He first came as an out-patient three months ago, with an impeti-

with that opinion I was myself disposed to agree. Under comparatively simple treatment, however, the whole thing healed up. At one time, we thought it would be necessary to have a skin graft, but it has healed up without that, though with some contraction. As I have mentioned, it commenced with pustules of impetigo contagiosa. Since I have had this case under observation I have remembered some others of a similar character in which there was undoubted impetigo, which had ulcerated and taken on a phagedænic form. Some of you may have seen the boy, aged fourteen, under my care in this hospital, who had a bad phagedænic ulceration about the anus which was thought at first to be specific, but which

Fig. 1.—Phagedænic sore after impetiginous eruption.

ginous eruption in the groin. It looked something like a herpes, which had become purulent, and ulceration had started. The ulcerations had all joined together and formed a large phagedænic sore with punched-out walls, the lesion ultimately being five inches long and two and a half inches broad at its widest part. This was spreading, and the question arose whether it was not a specific ulceration. Some of the members of the staff were inclined to regard it as tuberculous, and

proved to be the sequela of impetigo contagiosa. I treated him with simple measures—without mercurials or other specific treatment—and the lesion healed up beautifully in a comparatively short time. I believe occasionally staphylococci cause not only superficial inflammation and exudation and purulent inflammation, but so injure the tissues that ulceration and gangrene may locally take place. I have in my mind now three similar cases certainly within the last three months. This

little boy was sent out of this hospital seven weeks ago perfectly healed, but in two weeks afterwards he came back with symptoms of a return of the impetigo. I cannot understand why it is that people in this part of London have so much of this impetigo contagiosa in their houses. While this patient was in the hospital we had to keep him strapped down, because we had some difficulty in fixing him and keeping the dressings on the ulcer. I am using an ammonio-chloride of mercury ointment for his impetigo.

2. The next boy presents a case of alopecia areata, and the question arises, what has it come

the baldness of alopecia areata as possibly caused in several ways. Occasionally it is a sequel of ringworm, but more often it follows seborrhœa, or an eczema of the sebaceous glands and hair follicles. Sabouraud found the same bacillus in the mouths of the follicles which Unna found in seborrhœic eczema. I have ordered this boy some ointment containing salicylic acid and carbolic acid for his head. The seborrhœic condition of the scalp can be cured in several ways. The favourite way of Dr. Unna is to apply some preparation of sulphur. Resorcin is also good, or sulphur and resorcin mixed may be used. Our

Fig. 2.—Phagedænic ulceration, sequela of impetigo contagiosa. Before treatment.

from? We can find no evidence of the short hairs of tinea tonsurans, but if I remember rightly we saw some club-shaped hairs, such as remind you of the hairs of the ornithorhynchus. There is a history of scurfiness, and there is no doubt that this is a case of alopecia areata following seborrhœic eczema, and you can see that he has a sort of eczema of the cheeks. Sabouraud was the first to prove definitely that alopecia areata followed seborrhœa, but long before he made his classical observations on the bacilli of alopecia areata, we knew that a large number of cases of alopecia areata were preceded by seborrhœa. As I have frequently insisted, we must look upon

method of treatment at Blackfriars is the red oxide of mercury, 10 to 15 grains to the ounce. Here we have an ointment with a complicated formula, containing red oxide and red sulphide of mercury and creasote, which cures these cases perfectly well. Alopecia also sometimes follows impetigo. Several cases of crusted impetigo in my practice have resulted in bald patches. Specific fungi have been announced in connection with alopecia areata irrespective of Sabouraud's, but I do not think the facts are sufficiently established. I know a family very intimately in which there were ten children, and the utmost care was exercised about cleanliness, and when there was anything

suspicious doctors were at once called in. There was never any ringworm in the house, but one of the boys developed a patch of alopecia areata after scarlatina treated at home. He subsequently married, and his little boy, who was equally carefully looked after, and whom I was always asked to see if anything suspicious occurred, was brought to me when six or seven years of age with alopecia areata. He had never had ringworm or anything else, not even eczema. I have known other cases in which alopecia areata has appeared after fevers. Possibly the fever has some influence on the nutrition of the scalp and enables the bacilli to

lotion. We could get no specific history or other evidence of syphilis.

4. I show you next a man with a tertiary syphilide on the forearm, almost healed. He is having five grains of iodide of potassium three times a day, and that has a marvellous effect in quickly arresting tertiary ulceration. He has also got leucodermia. We get leucodermia frequently in cases in which there is no syphilis, and I do not think any association has been proved to exist between the two diseases. But this patient has got undoubted leucodermia and melanodermia. The melanodermia in this case is symmetrical.

Fig. 3.—Case shown in Fig. 2. After treatment.

flourish. For the boy's face I shall order a little tar application.

3. I show you next a young man with a large ulcer on his back. It was very much raised about the edges on Monday, and had a punched-out appearance, and the question arose whether it was a broken-down gumma, or simply a large carbuncle which had broken down. From its appearance I was inclined to regard it as specific, especially as he complained of very severe pain on one side of the head. However, I have not given any specific treatment; I have simply ordered our red compound sulphur ointment, to be applied after bathing with a warm antiseptic

Where leucodermia has set in the hairs are white on the leucodermic spots, that is to say the pigment is not only lost from the skin but is also lost from the epidermic appendages.

5. This man has been good enough to come to show himself to you. He has been accustomed to use his hand a good deal for holding horses. He is connected with Australia and India. He came up with this scaly eruption on the palm of his hand. There is a somewhat serpigenous edge, not very raised, showing also the fissures, which are very painful. The other hand is slightly affected, but not very much. The better hand of the two was affected first, but is now almost well.

The trouble has been present about five years. It is psoriasiform, and the question is whether it is a squamous syphilide or simple psoriasis. There is the unilateral element in it, and on making further inquiry I find there is a specific history. These syphilitic cases have a tendency to go into this condition of tylosis, the epidermis becoming thick and hard and sore. He has had the condition in his face. I only saw him to-day for the first time. He is to use a mercurial ointment containing also salicylic acid, and I am putting him on something which I think will attack the disease in a more thorough manner, i.e. five grains of iodide of potassium three times a day. There can be no doubt about the diagnosis.

6. This man's case is a rather curious one. It presented the appearance of a simple psoriasis, but what struck me was that it was massed about the flexor surfaces of the arms. I therefore went into his history, and, though there is no history of syphilis, I came to the conclusion that it must be a case of psoriasiform syphilis. Ultimately we found slight ulceration on the side of the uvula and one tonsil. I always make a point of insisting on a mouthwash during the antisyphilitic treatment, getting the patients to gargle regularly with some antiseptic, such as peroxide of hydrogen, or chlorate of potash. At Aix-la-Chapelle some of the doctors make the patients wash out their mouths every quarter of an hour all the time they are under treatment. By so doing, the mouth is kept aseptic, and there is less liability to ulceration and salivation during the mercurial treatment which is there carried out so very thoroughly.

7. The next patient, a man of middle age, presents a case of psoriasis. He has not got much of the disease on his elbows, but there is a large patch two and a half inches square involving the umbilicus. The text books lead one to believe that psoriasis always occurs in certain definite positions—the extensor surfaces—especially the elbows and knees. That is so in many cases, but every now and then one comes across a patient with psoriasis in which these parts are exempt. I have had cases in which the psoriasis has been on the flexor parts only, and a not uncommon situation is about the umbilicus. The case before us illustrates a fact which the older dermatologists used to lay stress upon, and, I think, with justice.

Psoriasis is prone to attack people with a gouty diathesis. I have had a number of gouty cases in which there has been concomitant psoriasis, and that is so here. Whenever there is a history of pains of a rheumatic nature with psoriasis I always give salicin or salicylate of soda. Dr. Crocker read a paper two years ago in which he gave an account of treating several cases of psoriasis with salicylates. In my opinion cases which get better under this treatment are those which have a tendency to gout. This patient has the eruption in his head also. For his scalp he is using a favourite ointment, which was mentioned to me by one of the Aix-la-Chapelle doctors, containing ammoniated mercury one drachm, soft soap three drachms, vaseline to one ounce. That is an almost certain way of removing psoriasis from the scalp in a short time, but it should be well rubbed in. It does not do quite so well for psoriasis elsewhere. On other parts, I use tar preparations, and when the patches are indurate and obstinate I use chrysophanic acid. This, however, is disagreeable in the form of an ointment; it produces extensive inflammations; of course in hospital one can use it and watch its results, but I do not like to recommend it, except in the form of a paint, which does not stain the clothes. It is made with the " liquor gutta-perchæ " (which I see is left out of the last Pharmacopoeia; why, I do not know) 40 to 60 grains to the ounce.

8. At the last lecture I gave in January I showed this patient as a very rare case of the dermatitis herpetiformis of Duhring of Philadelphia. It was a well-marked case, and the patient had suffered very much. You will see from the scars on his back and elsewhere what the condition must have been. He had been very ill, had had kidney affection, and I think he had been troubled with the eruption since August of last year. I saw him about Christmas time, he having been sent to me by a medical friend of mine at Richmond. He then had an extensive eruption over both shoulders, in front of the axillæ and the bottom of the back. There were crusts and erythematous patches, with bullæ and vesicles. He had extreme pain and pruritus and pricking sensations generally, and altogether was in a bad way. There was much albumen in his urine. We improved matters very much in a comparatively short time. He has had several slight recurrent

attacks since then, and it is now more extensive than it has been for some time. I can still demonstrate one or two small bullæ. Here, for instance, is a small patch of erythema, and on that is formed a small bleb. It is a very rare affection. Its characters are the tendency to form these patches in a herpetiform arrangement, reminding one sometimes of herpes zoster. Sometimes there are groups of blebs, but the most common form, I think, is this in which you get the blebs formed on an erythematous base. Sometimes there are simply patches of erythema without much vesication, at other times the lesions are papular. The blebs seem to die away and leave spots. The symmetrical arrangement of the lesions in his case is peculiar, but symmetry is not one of the features of the disease. I have had several cases lately in which there has been no symmetry whatever. One case I showed to the Dermatological Society some time ago, in which the disease was only on one arm on the site of a burn, where the patient had been very badly burned in youth and the tissues were contracted. There was some ulceration in connection with this. At first sight one thought it must be tertiary syphilis, but it was not. Curiously enough, the bullæ appeared only on the scar tissue. The present case is one in which arsenic has had some effect; I have also given him externally a tar ointment and tar baths. I have not examined his urine lately, but when last analysed it was quite free from albumen.

MESSRS. BURROUGHS, WELLCOME, & Co. have forwarded specimens of some very useful preparations in their well-known 'Soloid' form. The particular value of these preparations lies in the fact that they enable the practitioner to keep ready for the conduction of chemical tests, especially volumetric determination, the substances used for indicating the end of a reaction, known as indicators. The fact that many of these in solution do not "keep," as the homely phrase has it, renders the appearance of these 'Soloids' a great boon. The particular specimens we have received are "soloids" of indigo carmine, lacmoid, methyl orange, rosolic acid, phenolphthalein, and starch. Another useful soloid from the same firm is that of the sodium chloride compound, whereby medical men can have by them in a handy form the material to make a saline solution for intravenous injection with absolute certainty in regard to purity and strength.

CHAPTERS FROM THE TEACHING OF DR. G. V. POORE.

No. XXV.

GENTLEMEN,—I was dealing last time with nitro-benzol, and I showed you how oily it was, how it burnt with a very sooty flame, and how it had a characteristic odour. It is a narcotic poison; it acts very much more slowly, and is very much more difficult to get rid of, than prussic acid. You know you have got nitro-benzol because you get a negative result with the tests for prussic acid. The only positive test for nitro-benzol is to reduce it to aniline, and you can only do that by distilling in the presence of nascent hydrogen. That is not a lecture-room experiment. But you may reduce it to aniline and apply the tests for aniline. Aniline, if taken in large quantities, is a poison and has an irritant effect. But the fatal cases are very few and far between. Aniline is a coal tar product, and it is the parent of an enormous number of bodies which are used in medicine. Some of the pharmaceutic preparations, such as antifebrin and others scarcely less important, possess the quality of giving a coloration to the skin, and sometimes aniline acts very powerfully in that way. I remember some years ago it was suggested that aniline might be used as an inhalation in cases of phthisis; I got the apparatus, and it was used in my wards. One of the resident students coming round and finding this new inhalation going forward quite properly examined it, he took the cork out and smelt it, and he got two or three drops of the fluid to be inhaled upon his lips. As a result of that, when he went down to luncheon in the students' room, he was unconscious of anything the matter with himself, but his friends began to make personal remarks because of the blueness of his lips. Clearly he was cyanotic at the tips of the ears and the lips as well. The condition lasted for more than a day. It had been noted that where aniline had been taken there was cyanosis. I remember being asked to see a case in Dr. Ringer's ward last year of a woman who had been in the habit of taking I think it was a preparation known as antifebrin for headaches, and she had this

cyanotic tint exceedingly well marked in the tips of the fingers and the tips of the ears and the lips. The question is, what is this cyanotic tint? It is said that many of these bodies act as anti-pyretics by depressing the oxidising action of the hæmoglobin, and that they interfere with the natural oxidation which goes on in the healthy body and in the diseased body, and in that way by stifling the fire they act as antipyretics. But it is very certain that when these aniline bodies have been taken, the cyanotic tint and the evidence of dyspnœa bear no proper relation to each other; that very often a person may be intensely cyanotic, and there is very little shortness of breath or discomfort. Now, aniline has a characteristic odour, and when pure it is white. Aniline is the parent of modern colours. We are all familiar with aniline dyes, and by treating the parent aniline in various ways and getting different degrees of oxidation and different chemical combinations we have got an enormous variety of colours. It is a characteristic of aniline that as it oxidises it changes colour and gets dark red. One of the characteristics of aniline is its smell, and it is hardly soluble in water at all. The oily globule which I put into this water has sunk to the bottom of the tube. One of the best tests for aniline is a solution of bleaching powder. I have here some solution of bleaching powder, and to it I will add some exceedingly weak aniline, when you see I get a very deep purple colour.

.The next poison is alcohol, and it is too common a one to need any detailed description. But what is the effect of alcohol? Alcohol taken in small quantities undoubtedly affects the brain first of all, and it is a question whether alcohol ever does any good to the brain. It is a very nice question, and I am not going to answer it categorically. It is certain that the Psalmist spoke of "wine which maketh glad the heart of man"; and there is no doubt whatever that alcohol in very small quantities does, I will not say stimulate the imagination, but it relieves probably the controlling centres and allows the imagination to come into play. It is very true, I think, that a large number of those persons who have given us the brilliant products of their imaginations have not been teetotalers; they have made a rational use of alcohol. Nobody could condemn drunkenness or excess in alcohol more than I; I believe it is

productive of nothing but harm, but a dietetic use is another thing. To say that the dietetic use of it has been productive of harm is to make a grave, bold statement, and it is a remarkable fact that those races which have made abstention from all alcoholic drinks of every kind a tenet of their religious creed, have become singularly unproductive both of literature and inventions. When a man gets drunk, the main point is he loses control. It is an old saying, "In vino veritas," and when a man gets too much alcohol it is said you see the true man. We all wear masks more or less, and in society we are obliged to control our emotions, and it is one of the great characteristics of civilised people that they do control their emotions and conceal their feelings. But man under the influence of alcohol does not control his emotions, and you can get a glimpse of the true man; a quarrelsome man becomes more quarrelsome; a morose man becomes more morose; a silly man becomes more silly; a melancholy man becomes more gloomy, and so forth.

With a bigger dose there is loss of muscular control, and then you get the very characteristic titubation, or staggering, which is an effect of intoxication; whether it is cerebral or spinal cord staggering it is difficult to say. I should be inclined to say it was cerebral. You get want of muscular co-ordination, you notice it in the slipshod utterance and in the double vision which are common in alcoholism. Then these symptoms increase so that the man can neither stand nor speak; and then you get the centres of respiration and circulation interfered with. A man in extreme alcoholic intoxication is cyanotic and breathing very slowly and stertorously, not at all unlike a person who is under the effects of opium. Death from acute alcoholic poisoning is exceedingly rare, and it has never fallen to my lot to see a case; but I believe that at the London Hospital, which is near the London docks, cases have not been uncommon. And the cases of alcoholic poisoning which have been admitted there have been due to "sucking the monkey"—getting a straw through the bunghole of a spirit cask and sucking at it. The patient gets a tremendous dose of spirits into him, and sometimes dies on account of it. When I was resident medical officer at University College Hospital, I was once called to a young man, who, in a fit of desperado, at the end of what people

call "a night's pleasure," drank the best part of a tumbler of pure whisky. I was called to his lodgings, and went as hard as I could with the stomach pump. He was lying on the floor, livid, cyanotic, breathing very slowly indeed. As I got into the room he vomited, and with the vomiting he recovered. He was as nearly dead from alcohol as I remember having seen anybody.

In connection with alcohol I will read to you a case where a man was put on trial for murder, the poison being alcohol. I read this case not so much because of its strict medico-legal importance, but because the circumstances detailed are of the kind of circumstances which you are apt to be brought into contact with, and you should know the legal bearings of them.

Regina v. Paine. Central Criminal Court. February, 1880. Before Mr. Justice Hawkins. Lewis T. Paine was indicted for the wilful murder of Annie Maclean, aged thirty-three, with whom he had been living in pretended wedlock. Maclean was a lady of good social position, and became possessed on the death of her mother of property amounting to nearly £3000. She was of intemperate habits before she became acquainted with Paine, and was deformed with a curvature of the spine. Paine, who was a commercial traveller, became acquainted with Miss Maclean before her mother's death, and the acquaintanceship was disapproved of by her relatives. On the death of the mother, Paine (who was a married man) lived with Miss Maclean as her husband, and they were generally thought to be man and wife. While living together in the autumn of 1879, in a cottage at B—, Worcestershire, there was evidence that they both indulged in alcoholic stimulants to an extreme degree, and it was also evident that Paine's influence over Miss Maclean was very great, so great, in fact, that she seemed to have no will of her own. In September, 1879, Maclean made her will in Paine's favour, and he also tried, unsuccessfully, to insure her life. From September to November, Miss Maclean continued to drink too much, and there was evidence to show that she drank in obedience to Paine's "persuasion," and that she drank less when he was away from her than when he was at home. On November 3rd Maclean was moved in a state of intoxication from B— to a coffee-

house in Marylebone. At this time she was "very weak," "bloated," and "swollen." Medical aid was called in, and the advice was given that her stimulants should be diminished, but, in spite of this, Paine continued to ply her with neat spirits, and on November 17th she died. Post mortem there was found an enlarged liver, and commencing fatty change in the heart; there were no corrosions or inflammatory changes in the mouth or stomach, and the kidneys were said to be healthy. Paine was always kind to Maclean, and she always spoke affectionately of him, and there is no evidence that he ever used physical force in the administration of the spirits which accelerated her death. He was convicted of manslaughter, and sentenced to penal servitude for life. Now the judge summed up very strongly and adversely to the prisoner; there can be no doubt about that. I think you will gather from his remarks that it was really a case of murder. He laid down the law that in order to be guilty of murder it is not necessary that you should go and knock down a healthy man, or give him poison, or kill him straight away; but if you, by your wilful act, accelerate the death even of a chronic invalid, by a single day, let us say (there is no reason why we should not say a second) by administering that which is likely to do harm, you are guilty of murder. The case is one of very great interest, because I think it is unique in the fact that alcoholic drinks constituted the murderous weapon, and it is also unique in that the murdered woman and the murderer both "drank fair." The evidence went to show that Miss Maclean was in bed, with Paine sitting by the bedside, with the table between them, upon which was a bottle of spirits. He was very nearly convicted of murder. I am not prepared to say it is not a perfectly proper interpretation of the law. Moral circumstances have always to be taken into consideration, and, I suppose this man was as big a scoundrel as one could well meet.

Next we have to speak of anæsthetics. Of course, all narcotics are anæsthetics, and in the days before the invention of modern anæsthetics, I remember talking to an out-patient one day. He had been a sailor and was in the Black Sea during the Crimean war, and he had to have his thigh off. That was in the days before chloroform was in common use. I remember asking

this man about his operation, because those things are almost inconceivable to us who have been brought up under anæsthetics. His reply was, " They gave me the best part of a bottle of rum, and I did not feel much." That was necessary, and in the days before anæsthetics, properly so-called, there is no doubt that alcohol was very largely used as an anæsthetic. Many a man who was operated upon was really half-drunk. Probably the shock without the alcohol would depress a man's heart more than the alcohol, which made him to some extent careless of pain.

HEART DISEASE IN CHILDHOOD AND YOUTH.

By CHARLES W. CHAPMAN, M.D.Durh., M.R.C.P.Lond.,

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IN TWO PARTS—PART II.

Cardiac Therapeutics.—We are in most cases able to prescribe our remedies with a fair assurance of obtaining definite results. The pharmacology of drugs acting on the heart muscle and those which modify blood pressure has been so ably worked out, that a rule-of-thumb manner of using them is inexcusable. It is a very great mistake to prescribe digitalis simply because a bruit has been discovered, and more serious still to increase the dose of the drug in proportion to the loudness of the murmur. When the heart is acting well, and good compensation has been established, as shown not only by the position of the apex-beat, but also by the absence of signs of backward pressure in the lungs, liver, &c., drugs that would further stimulate the heart are positively harmful. Take, for instance, a case of mitral stenosis, where the murmur is loud and long, and the second pulmonic sound is much accentuated. If these physical signs are not associated with any evidence of failure of the cardiac chambers, the effect of routine treatment by digitalis upon the heart would be to stimulate the myocardium to increased effort; the endeavour of the right ventricle to force the blood through the

lungs more rapidly would probably lead to hæmorrhage from the pulmonary capillaries, and the left auricle as well as the right ventricle would probably further dilate. The treatment of such a case, while the difficulties of the circulation are being met so far as it is possible for them to be, should be directed to the maintenance of the existing state of affairs by judicious advice as to the manner of life to be led, and by attention to the general health. The heart should be carefully examined at intervals, especially when any signs of downward progress—such as increased or increasing dilatation, liver and lung engorgement—begin to make their appearance. It is probable that at this time the presystolic bruit at the apex is *less* loud and the accentuation of the second pulmonic *less* pronounced—signs of bad rather than of good omen. Now is the time of all others that drugs of the digitalis group assert their value and form a necessary element in the treatment.

As a preliminary to the use of digitalis, a free purgation is very useful; and leeches to the præcordium, or even venesection, may with advantage be resorted to when there is cyanosis. The effect of these remedies upon the heart and circulation should be carefully watched. When large doses of digitalis are called for it is well to restrict the patient to the recumbent position.

Mercury, in one form or another, is as valuable for children with heart disease as for adults. When a rapid relief to the liver is required hydr. subchlor. in small and frequently repeated doses, until the bowels have been freely acted upon, is a very useful way of administering the remedy; at other times hydr. c. creta answers the purpose.

The digestive organs will require frequent attention, for gastro-intestinal troubles are commonly met with in heart disease, especially in the later stages. The skill of the physician is at times severely taxed in relieving the symptoms of associated indigestion, depending upon the chronic congestion of the chylo-poietic viscera, which so commonly is present in heart cases of any length of standing.

Nux-vomica is a very valuable drug, but it must be given in small doses and under watchful medical supervision only. I have seen very unpleasant symptoms follow the use of this remedy beyond the prescribed period. When the drug is required

for a lengthened period it is advisable to leave it off for a few days every now and then.

Alcohol is at times a useful remedy in some stages of heart disease, but it is, as a rule, not only unnecessary, but positively harmful. In a paper read before the West London Med. Chir. Society (*vide* the 'Lancet' for 1895) I fully set forth my views on this subject. Further experience has only confirmed the opinions expressed in that paper. The arguments there brought forward against the routine use of alcohol in the treatment of heart disease generally apply with increased force in the case of children.

Belladonna applied externally does sometimes relieve cardiac pain; but, as plaisters interfere with auscultation, the liniment is a better form to employ in cases requiring constant observation.

Nauheim baths being more useful in arteriosclerosis,—a condition rarely occurring in children—the application of this mode of treatment is not often called for in the young. The exercises will be found useful in appropriate cases. It may be noted that the use of exercises is no new revelation, their value having been recognised for many years.

A. B., a girl aged ten years, came under my care at the Farringdon General Dispensary in 1893 for a cough that had hitherto resisted treatment. The mother stated she had always been told that her child suffered from chronic bronchitis, and that the cough and difficulty of breathing were due to this disease. Examination of the chest gave signs of bronchial catarrh, the sound becoming more moist as the bases were approached. To the left of the sternum, at the second and third spaces, an exceedingly loud booming bruit, systolic in time, was heard, its source being evidently a stenosed pulmonary artery. Treatment was chiefly directed towards the avoidance of undue strain on the circulation, and, as a consequence, the pulmonary signs cleared up and the cough abated. There was very little cyanosis at any time. The cause of the intractable cough in this case was undoubtedly primarily due to the circulatory difficulty, for as long as the child was prevented from taking any violent exercise the pulmonary symptoms were kept in abeyance.

G. D., a man aged twenty-eight years, was admitted into the National Hospital for Diseases of the Heart for dyspnœa, palpitation, and pain below the ensiform cartilage. He was in his usual health until fourteen months before, when, on attempting to rise in the morning, he found he had paralysis of the right side and loss of speech : he recovered from the latter in three weeks and from the hemiplegia in three months. The history was briefly as follows. He had had chorea twenty years ago and right hemiplegia with aphasia fourteen months ago, hæmoptysis eight months ago, and œdema of the legs five weeks ago. He had always worked hard, and for the last four or five years had drunk heavily. On examination the lungs were found to be healthy; the heart was considerably dilated and the impulse heaving; the apex-beat was diffused and most marked in the fifth space, three-quarters of an inch to the left of the nipple line; there was a coarse systolic thrill at the apex, a presystolic and a systolic mitral bruit at the apex, and a reduplicated second sound over the cardiac area, especially over the pulmonary valves. At times three or even four feeble beats succeeded the systolic mitral bruit owing to imperfect contractions. This patient was quite unaware of there being anything wrong with him until an embolus was washed off his mitral valve and caused hemiplegia : thenceforward signs of heart failure grew apace. The valve lesion thus had its origin in chorea twenty years previously, and caused no interference with the man's capacity for hard work until dilatation supervened. It is probable that had the patient lived a steady life he would still have been ignorant of his having any heart affection.

Since the above was written the man has died. The results of the necropsy were as follows :—The heart was almost circular in shape, all the cavities were enlarged, the apex was formed equally by both right and left ventricles, and its weight was seventeen and a half ounces; the aortic valve was incompetent, the segments were thickened, rigid, and calcified; the aorta and right coronary artery were somewhat atheromatous; the mitral valve was thickened, with a button-hole slit three-quarters of an inch in length, just admitting the little finger; the left auricle was large, with markings on the inner surface; and the tricuspid orifice was five inches in circumference. The right lung had a recent infarct two inches in diameter, its base was compressed, and there was

much fluid in the pleural cavity; the left lung' was œdematous. The liver was enlarged. The kidneys were fairly normal. These notes were taken by Dr. F. S. Wood, the house physician.

F. L., aged thirteen, an out-patient, presented herself September 8, 1898, complaining of pain in the left side, provoked by exertion. Three weeks before she had fainted, but had not completely lost consciousness; she had been out of health for two years, and had been treated for anæmia; during this period of debility she had shed her finger and toe-nails. She was very nervous and excitable; when frightened she became blue; she had "growing pains" in her legs occasionally; had never menstruated, and had had neither rheumatic nor scarlet fever nor chorea.

Both parents were highly excitable, the father's temper being violent and uncontrollable; a brother, aged ten, was very nervous; and a cousin, seven years, had chorea. The child had a dark complexion and had a good colour, which, however, gradually faded away as her confidence was gained. Heart's apex, fifth space, just inside nipple line; no increase of cardiac dulness; a loud blowing systolic murmur was heard at the apex, which faded to the left, and was lost on reaching the posterior axillary border; no accentuation of the second pulmonic sound; pulse irregular, its rate varying even during a minute's observation. Diagnosis: An irritable heart, some little dilatation, and a small amount of mitral regurgitation. Prognosis as regarded the heart was favourable.

The child was ordered to be away from home as much as possible, not to be mentally overworked, and to have plenty of fresh air and liberal feeding. Iron, nux-vomica, and a small quantity of digitalis were directed to be taken thrice daily, and valerianate of zinc every night. The patient went to the Channel Islands for a long visit, after which it was found that she had gained in weight, her general health had much improved, but the cardiac signs were unaltered. Later on, in consequence of frequent outbursts of temper in the father, the child became very nervous, and she was then put on asafœtida and valerian for two weeks, after which time the original medicine was resumed. The general health improved, and I did not see the patient again until March, 1899—

six months after her first visit. On examination I found the murmur completely gone. I then listened with the patient lying down, but still heard no morbid sound. I was about to note the case as one of cured mitral regurgitation when I thought I would listen once more; at this time the murmur was as loud as ever. I prolonged my examination, and I found the murmur came and went without any apparent cause.

This case presents many points of interest. (1) The strong neurotic history; (2) the absence of the ordinary causes of heart disease; (3) a long period of ill-health, the malnutrition showing itself in the perishing of the nails; (4) the muscular weakness, as expressed by "growing pains" (an absurd term, for how can there be pain in normal growth?); (5) the absence of accentuation of the second pulmonic sound, giving evidence that if there was actual regurgitation through the mitral valve, it was neither extensive nor of long standing; moreover, there were no signs of dilatation of the right heart; (6) the observations made at the last visit pointing to some neuro-cardiac state in which the musculi papillares were irregularly contracted. "Growing pains" are at times due to sub-acute rheumatism, which may provoke actual cardiac disease. It is well in all such cases to look out for rheumatic nodules. These nodules are, in some cases, the only evidence of the rheumatic state.

Diagnosis of Convulsions in Children,— In every case make careful search for signs of disease of the brain or its membranes. If the child be young and well nourished, the attack is likely to be reflex; if the child be wasted and weakly, general tuberculosis or tubercular meningitis is to be dreaded. If the attacks recur at regular intervals, they are almost certain to be due to a central lesion, and are often followed by mental weakness or idiocy.

The above is taken from the second edition of Dr. John McCaw's useful little work, entitled 'Aids to the Diagnosis and Treatment of Diseases of Children.' This volume is one of the Student's Aid Series, published by Messrs. Bailliere, Tindall & Cox, and though the author states that the work is little more than a compilation, there are but few medical men in general practice who will not find this book a most useful addition to their library.

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